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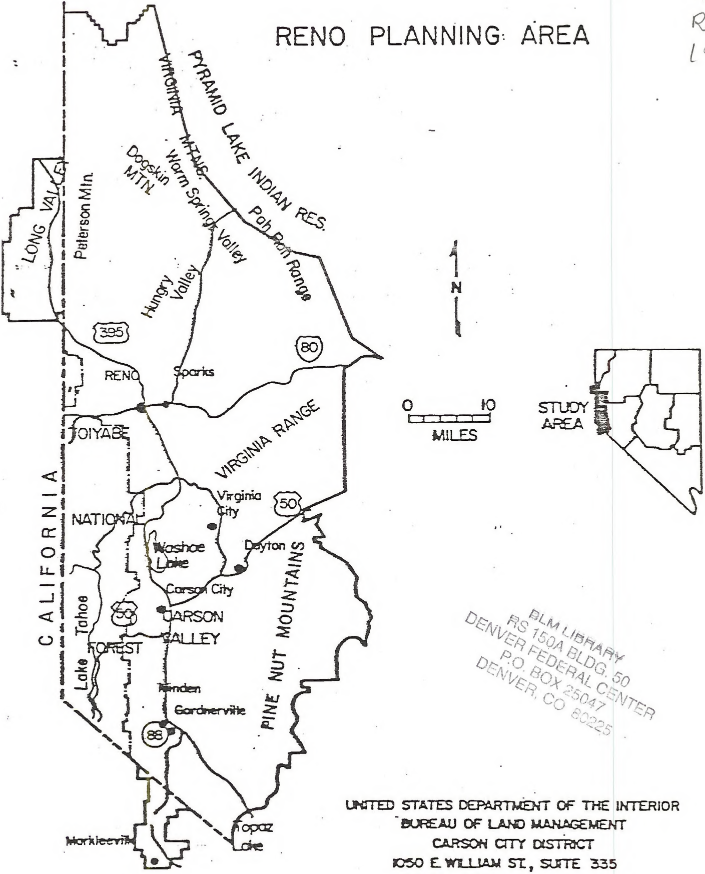

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1050 E. WILLIAM ST., SUITE 335
CARSON CITY, NEVADA 89701

PLANNING AREA ANALYSIS
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INTRODUCTION

The Planning Area Analysis (PAA) is a medium for analyzing and displaying the social, economic and institutional values of the resources in the planning area. This information is presented in a manner consistent with the data contained in the Unit Resource Analysis (URA). Each resource activity is analyzed in terms of its social and economic importance on local, regional and in some cases national levels.

PAA data is used to develop activity objectives and recommendations in the Management Framework Plan (MFP). It is also used to determine social, economic, and institutional impacts of MFP proposals and as a basis for resolving conflicts between various resource activity recommendations.

OVERVIEW OF REGIONAL SOCIAL ECONOMICS

The analysis in this document is limited to the social economic characteristics of Washoe, Carson City, Douglas, Lyon, Storey and Alpine Counties. Although the EIS area also extends into Lassen and Plumas Counties, they are not included because of the limited public land acreage and population within the EIS area boundaries. A description of the social economic characteristics and land use planning issues for the Long Valley area of these counties is contained in the Hallelujah Junction Draft EIS, June 1979, prepared by the Lassen County Planning Department. With one exception the major population centers of each of the other counties lie within the EIS area. Lyon County is included because it contains a significant portion of the public (BLM) lands in the EIS area (17 percent).

These counties form a relatively uniform region. They all exhibit two major common characteristics: 1). Extremely rapid population growth during the 1970's. These were among the fastest growing counties in the nation. 2). They are all heavily reliant on tourism for their economic base.

POPULATION

The region's most outstanding characteristic is the extremely high population growth rate sustained throughout the seventies. Four of the six counties more than doubled and Douglas County almost tripled.

TABLE 1
RENO REGION POPULATION GROWTH
1970 - 1980

COUNTY	1970	1980	% Change 1970 - 1980	Annual Growth Rate 1970-1980
WASHOE	121,000	194,000	60	5%
CARSON CITY	15,500	32,000	106	8%
DOUGLAS	7,000	19,500	179	11%
LYON	8,000	14,000	75	6%
STOREY	700	1,500	114	8%
ALPINE	500	1,100	120	8%
TOTAL	152,700	262,100	72	6%

Source: Preliminary Census Reports, 1980

The most significant growth took place between 1977 and 1979. Spurred by the addition of a number of casinos in Reno, each county grew by at least a 9% annual rate during that period (Nevada State Planning Coordinator, 1980).

Carson City, Douglas, and Alpine Counties all ranked within the top 25 fastest growing counties in the nation from 1970 to 1978. Among areas classified as SMSA's or urban areas in 1970, Reno ranked in the top five in terms of population growth from 1970 to 1978. The Reno region was the fastest growing area in the State during the seventies and Nevada ranked first in population growth rate of all states. (U. S. Bureau of the Census, 1980).

The rapid population growth consisted primarily of new immigrants rather than of the local population expansion. Between 1970 and 1978 immigrants out-numbered out-migrants by 58,000. About half of these immigrants were from California - most of these from the northern part of the state. No other state accounted for more than 5 percent of the immigrants. Most of the immigrants were males. They were heavily concentrated in the 20-29 year age group. The 1970 Census indicated that 25 percent of the region's residents had lived elsewhere in 1965. This compares with an overall U. S. rate of 14 percent. Out migration from the region during the same period was 22 percent. Thus, people left the Reno region at a faster rate than for the nation as a whole, though they arrived even faster. This is characteristic of areas experiencing rapid economic expansion - they attract highly mobile households whose primary motivation is job opportunities and who are likely to move if opportunities are better elsewhere.

A final measure of mobility is the fact that in 1976 only 13 percent of the state's residents had lived in Nevada all of their lives. This was the lowest rate in the nation - the national average was 56 percent. Although no current figures are available for the study region, it is highly likely that similar rates exist here. It should be noted that these mobility indicators are for the period before the 1977-79 growth explosion in the region. Therefore current migration figures are probably even more extreme.

Other notable characteristics of the region's population include:

1). Race - The population is overwhelmingly white. Small populations of Blacks, Indians, and Hispanics live in the region, but they account for less than five percent of the total. This is in comparison to a national level of about 20 percent.

2). Education - The region's population is relatively highly educated. In 1970 the medium number of school years completed was 12.5 compared to 12.2 in the nation. Local counties ranged from a high of 12.6 in Carson City to a low of 12.2 in Lyon County.

3). Income - Per capita income for the region was among the highest in the nation. In 1978 it was $10,500 - well above the state and national levels of $9,400 and $7,800, respectively. Nevada ranked second only to Alaska in terms of statewide per capita income.

TABLE 2
SOCIAL ECONOMIC WELL BEING INDICATORS

	US	NEVADA	RENO REGION	WASHOE	CARSON CITY	DOUGLAS	LYON	STOREY	ALPINE	PERCENT DIFFERENCE BETWEEN PLANNING REGION AND NATION	STATE
I. INCOME PER CAPITA (1978)[1]	7800	9400	10500	11200	8800	10600	6800	7200	5400	+ 35	+ 12
MEDIAN HOUSEHOLD DISPOSABLE (1978)[2]	16200	18000	18500	18800	18800	17800	16300	14500	11200	+ 14	+ 3
PERCENT OF HOUSEHOLD WITH UNDER $8000 DISPOSABLE INCOME(1978)[2]	23	18	18	18	16	16	23	40	33	- 22	—
INCOME DISTRIBUTION COEFFICIENT (1978)[3]	.363	.373	.378	.378						+ 4	- 1
II. EMPLOYMENT											
UNEMPLOYMENT RATE (SEPT. 1980)[4]	7.5	7.0	6.1	5.5	6.9	8.1	8.4	6.7	14.0	- 19	- 13
SERVICES EMPLOYMENT AS A PERCENT OF TOTAL (1978)[1]	18	37	34	35	18	67	7	6	63	+ 89	- 8
III. POPULATION											
ANNUAL RATE OF POPULATION CHANGE 1970-1980[5]	1	5	6	5	8	11	6	8	8	+500	+ 20
PERCENT NET MIGRATION 1970-1978[5]	1	27	42	29	82	99	74	101	35	NA	+ 56
IV. VITAL STATISTICS RATE PER 100,000-1979											
CRIME[7]	5500	8500	8000	9100	4700	6900	3300	1400	NA	+ 45	- 6
HOMICIDE[8]	9	18	9	12	0	6	0	0	NA	0	- 50
SUICIDE[9]	13	26	25	30	9	6	28	0	NA	+ 92	- 4
CIRROSIS OF LIVER	14	25	34	42	12	12	14	0	NA	+143	+ 36
CHILD ABUSE CASES REPORTED PER 1,000 RESIDENTS (1978)[9]	2.6	3.3	2.2	2.0	4.3	1.6	1.0	1.7	NA	- 15	- 33
V. PUBLIC ATTITUDES											
PERCENT OF SURVEY RESPONDENTS WHO FEEL THAT NEVADA WILL BE A WORSE PLACE TO LIVE IN 20 YEARS.[10]	N/A	56	69	70	77	57	50	81	NA	NA	+ 23
PERCENT OF SURVEY RESPONDENTS WHO ARE NOT PLEASED WITH THE GROWTH IN THEIR COMMUNITY[10]	N/A	60	77	80	81	67	50	67	NA	NA	+ 28

SOURCES:

[1] U.S. BUREAU OF ECONOMIC ANALYSIS (BEA),1980

[2] SALES AND MARKETING MANAGEMENT,1979

[3] BRIGHAM YOUNG UNIVERSITY,1977

[4] NEVADA DEPARTMENT OF EMPLOYMENT SECURITY,1980 AND CENTRAL SERVICE ECONOMIC DEPARTMENT,1980

[5] U.S. BUREAU OF THE CENSUS, 1972 AND 1980

[6] IBID, 1973

[7] NEVADA LAW ENFORCEMENT ASSISTANCE DEPARTMENT,1980

[8] NEVADA DEPARTMENT OF VITAL STATISTICS,1980 AND U. S. BUREAU OF THE CENSUS,1979

[9] NEVADA DEPARTMENT OF HUMANRESOURCES, 1980

[10] GOVENORS COMMISSION OF THE FUTURE OF NEVADA,1980

SOCIAL ECONOMIC WELL BEING

Table 2 compares a number of social economic well being indicators for the six county region with state and national figures. It should be noted that there is little agreement over which indicators should be used or even if social economic well being can be measured with such indicators. The key element to well being is how people perceive their lives. If the people in a region feel that living close to nature contributes most to their well being and are willing to sacrifice high income levels to attain this goal, then per capita income would be a poor measure of well being in that region. The indicators used in this analysis were selected with the following criteria: 1). data availability 2). quantification 3). currentness 4). meaningfullness for the Reno region.

Most of the indicators used show little difference between the Reno region and the State. This is to be expected since Clark County, which accounts for about half the State's population, is also a rapidly growing area dependent on the gaming industry.

The region's indicators are significantly different from national figures. With the exception of the smaller counties, income related indicators show that the region is much better off than the national level and fewer families were below the $8,000 income level. The only income related indicator that was poorer than the national figure was the income distribution coefficient. The Reno region's larger coefficient means that its income was distributed less equally than the nation's. Relatively, its poor were poorer and its rich, richer.

Employment indicators were mixed. The region's unemployment rate was much lower than the nation's, but employment was dangerously concentrated in the services sector. The unemployment rate has risen substantially since Washoe County reached a low of 2.4% in June, 1978. This rate is below what is generally considered "full employment". This labor shortage brought on the substantial immigrations during 1978-79.

The extremely high population growth and net migration figures attest to the region's explosive growth of employment opportunities. However, this influx of outsiders creates a highly unstable social structure.

Evidence of this instability can be found in the region's high death rates from suicide and cirrosis. These are generally thought to be direct measures of alienation and indirect measures of social disposition. The overall crime rate, while lower than the state's rate, was much higher than the national level. Nevada led all states in per capita murders, robbery and burglary and was second in rape and larceny. The gaming industry and the transients it attracts have often been blamed for the incidence of crime. The industry attracts a relatively young, unskilled work force which is not highly committed to social institutions. This contention is backed up by the fact that the local counties most dependent on gaming, Washoe and Douglas, have crime rates much higher than the other counties in the region. Part of this can be attributed to a statistical problem. These rates are based on crimes per resident. This biases the rates upward in areas like Reno by not including tourist populations.

Based on the Nevada Futures Commission Survey[1], more than two out of three of the area's respondents were unhappy with the growth in the region and felt that Nevada would be a worse place to live in 20 years. Carson City and Washoe County ranked the highest of all Nevada counties in unhappiness with the growth of their communities with 81% and 80%, respectively. This is in comparison to the statewide figure of 60% and is in sharp contrast to the Clark County level of only 47%. Storey, Carson City, and Washoe Counties were 3 of the 4 most pessimistic about the future. In those counties 81%, 77%, and 70% of the respondents, respectively, felt that Nevada would be a worse place to live in the future. Douglas and Lyon county respondents ranked near the state average of 56%. This was by far the most pessimistic region in the state. In only three of the other counties did more than half of the respondents feel that Nevada would be worse in the future.

In conclusion, the region's economic indicators were very positive. The region has been growing rapidly, has high income levels and low unemployment rates. However, those indicators dealing more with social well-being were generally negative. The region is socially unstable, has high suicide and crime rates, its residents are not pleased with current growth, and are pessimistic about the future.

It is unlikely that BLM actions have significantly impacted any of these indicators in the past or could in the future. Minimal changes in economic diversity could be caused by encouragement of non gaming related industries such as ranching or mining. Direct BLM employment, particularly in YACC and YCC programs, could have a slight effect on unemployment rates. Growth rates could be marginally affected by BLM lands decisions.

[1] It should be noted that this survey was not based on scientific sampling techniques. It's results have come under attack as not being representative of the entire population. Generally survey respondents were highly educated, high income, and in professional occupations.

ECONOMIC STRUCTURE

The economic structure of the region is primarily dependent on the gaming industry. Since gaming is the leading basic industry (refer to Regional Multiplier Effect section) it not only determines the region's rate of growth, but to a large extent dictates the composition of other industries in the region. Other major basic industries are government and light manufacturing/warehousing.

Gaming

Due to its low level of exploitable natural resources, Nevada created its own unique resource by legalizing casino gambling in 1931. The Reno area was the first to take advantage of this "legal" resource with the opening of major casinos in the 1930's and 40's which catered primarily to the Northern California market. Reno was surpassed in the 1950's by the Las Vegas casinos which took advantage of the much larger Southern California market. The gaming industry in Reno grew steadily until the late 1970's when it mushroomed due to the construction of the MGM Grand Hotel. This was followed by the opening of other Las Vegas based casinos such as the Sahara and Circus Circus in Reno and Ceasars Palace at Tahoe as well as major expansions of existing casinos such as Harold's and Harrah's. This Las Vegafication of the Reno area has resulted in a substantially expanded market as evidenced by the more than doubling of passenger traffic at Cannon International Airport from 1.2 million in 1976 to 2.7 million in 1979.

The gaming industry is classified as part of the services sector of the region's economy and is the major industry since it accounted for about 75 percent of services sector employment (1978). Services contributed 38 percent of total regional jobs and 33 percent of income. It was by far the largest sector of the regions economy even though it was one of the lowest paying. While both income and employment in services have grown substantially since 1970, in percentage terms employment has increased while income has decreased.

TABLE 3
SERVICES SECTOR GROWTH
1970 - 1978

Year	Employment	% of Total	Income	% of Total
1970	28,000	37	$221 mil.	35
1978	54,000	38	$633 mil.	33
% Change	93		186	

Source: BEA, 1980

This can be accounted for by a decline in real pay per worker (adjusted for inflation) in the services industry. Pay in most other sectors has kept slightly above the rate of inflation.

TABLE 4

PAYROLLS PER WORKER

(In constant 1978 dollars)[1]

Year	All Sectors	Services[2]
1970	$11,700	$10,400
1978	$11,800	$9,600
% Change	+ 1.6	- 7.6

[1] Based on GNP implicit price deflators.
[2] Does not include tip income.

Source: NESD, 1970 and 1978

Casinos in the region have been less profitable than for the state as a whole. For casinos with over $1 million in gaming revenue in Reno, net income was only 0.2% of gross revenues. South Lake Tahoe casinos earned a respectable 7.7% but were still below the statewide average of 11.7%. Gross revenues in the region amounted to about $650 million in 1979 - an increase of about 90% in constant dollars over the 1970 level. (Nevada Gaming Control Board, 1980)

Government

The government sector is the second largest employer in the region with 18 percent of total jobs. Although Washoe County has the highest number of government jobs in the region (16,000), Carson City has the highest percentage (45% of all Carson City workers). Employment in government has not kept pace with growth in private sector jobs. It grew by only 50% between 1970 and 1978 compared to about 100% in the private sector.

Government workers earned 17% of the region's income. Average earnings are lower for state and local government workers than for the private sector. Federal employees, on the other hand earned more than private sector employees. They accounted for 2% of employment, but earned 3% of income.

Government is generally one of the most stable sectors of the region's economy. Given the unstable nature of the region's heavy reliance on gaming, the importance of the government sector should not be underestimated.

Light Manufacturing/Warehousing

A third sector of major economic importance is the light manufacturing/wareshousing industry. This industry has experienced major growth since 1969 when the Nevada free port law was liberalized. This law provides that goods in interstate transit are not subject to local taxes even if they are processed or further manufactured in Nevada. This is another example of Nevada creating a "legal resource" to compensate for its minimal natural economic advantages although the industry does benefit from convenient rail, highway and air access to major west coast markets.

Due to problems with the industrial classifications of these firms, reliable estimates of their income and employment levels are not readily available. Most of these firms are spread between the manufacturing, transportation, and wholesale trade sectors. However, based on data in a recent study (UNR, 1979), it can be estimated that warehousing accounts for about 10,500 jobs in the region or 7 percent of the total. The vast majority of these jobs are located in Reno/Sparks.

Non Basic Industries

The other major sectors of the region's economy (retail trade, construction, finance, insurance, and real estate) are primarily non basic support industries. They generally do not cause growth in the region, but only respond to growth in basic sectors. It should be noted that a portion of each of these sectors is basic because of Reno's position as a major trade center for Northern Nevada and Northeastern California. People from throughout the area travel to Reno for major purchases of goods and services unavailable in their local areas.

Retail trade was the largest of these sectors in terms of employment with about 20,000 jobs or 14% of the total. This was one of the lowest paying sectors, accounting for only 11% of total income.

Construction has also been a major source of income and employment. It accounted for 12% of income with only 8% of employment - one of the highest paying sectors. Construction is a growth related industry and therefore, highly unstable - small changes in the region's growth rate lead to large changes in construction activity. Recently, high interest rates have severly reduced construction in the region.

The resource based industries - mining and agriculture - account for very small proportions of the region's income and employment. They will be analyzed in detail in following sections.

Regional Multiplier Effect

Production in sectors which export goods and services from the region (or which bring money in) is subject to the multiplier effect. These sectors consist of basic industries. The multiplier effect is caused by the interconnections between industries in the region and the consumption of households deriving income from those industries.

Reno area output multipliers for selected industries are:

Livestock	2.85	Mining	2.63
Gaming (Services)	2.67	Utilities	2.07
Recreation (Trade)	2.56	Forestry Products	1.66
Construction	2.16		

Source: BEA, 1977

These multipliers are used for regional economic impact analysis. For example, a one dollar increase in livestock production will result in an increase in production in all of the region's industries of $2.85. These multipliers will be used until a more detailed input - output model in the process of development by the Forest Service becomes available.

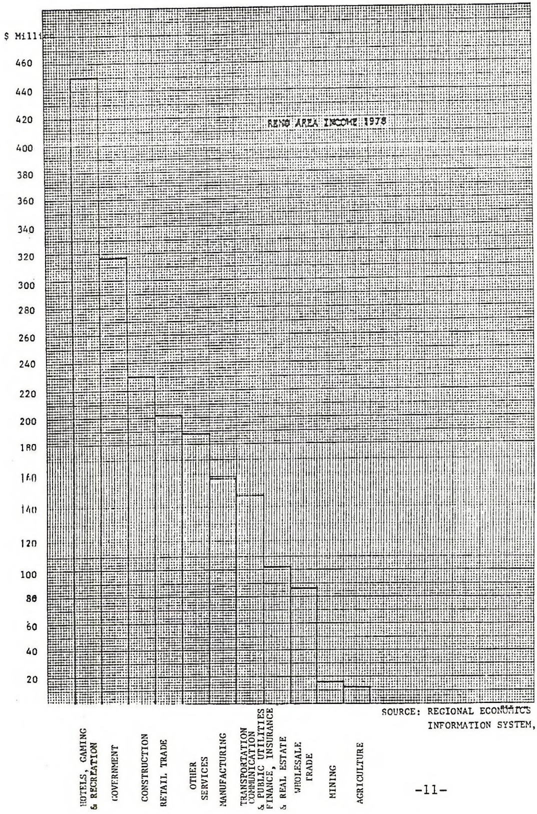
Figure 1 and Table 5 illustrate the economic importance of each major sector to the region. Appendix A has income and employment estimates for each sector of the region's counties.

TABLE 5
RENO AREA INCOME AND EMPLOYMENT[1]
1978

	Employment	% of Total	Income ($ Millions)	% of Total
Argiculture	600	0.4%	$ 12	0.6%
Mining	900	0.6%	16	0.8%
Construction	11,000	8 %	229	12 %
Manufacturing	10,000	7 %	158	8 %
Transportation and Public Utilities	7,500	5 %	148	8 %
Wholesale Trade	5,500	4 %	86	5 %
Retail Trade	20,000	14 %	202	11 %
Finance Insurance and Real Estate	6,000	5 %	102	5 %
Services	55,000	38 %	633	33 %
Government	25,000	18 %	317	17 %
Total	141,500		1,903	

[1] By place of work. Total for Washoe, Carson City, Douglas, Lyon, Storey, and Alpine Counties.

Source: Bureau of Economic Analysis (BEA) Regional Economics Information System, 1980

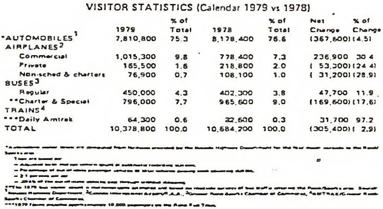


SOURCE: REGIONAL ECONOMICS
INFORMATION SYSTEM, 1980

FUTURE TRENDS

The future growth of the region will depend primarily on the gaming industry. Current trends in gaming are not favorable. Gasoline price increases appear to have significantly reduced the number of tourists driving in from California. This impact is likely to continue in the future. Visitors arriving by bus, trains and airplanes all increased from 1978 to 1979 but not enough to offset the decrease in automobile visitors. (Table 6). The growth trend in airline passengers has not continued into 1980. There was an 11% decrease between the first quarter of 1979 and the last quarter of 1980. .

TABLE
6

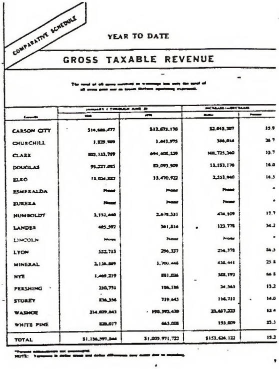


VISITOR STATISTICS (Calendar 1979 vs 1978)

	1979	% of Total	1978	% of Total	Net Change	% of Change
*AUTOMOBILES[1]	7,810,800	75.3	8,178,400	76.6	(367,600)	(4.5)
AIRPLANES[2]						
Commercial	1,015,300	9.8	778,400	7.3	236,900	30.4
Private	165,500	1.6	218,800	2.0	(53,300)	(24.4)
Non-sched & charters	76,900	0.7	108,100	1.0	(31,200)	(28.9)
BUSES[3]						
Regular	450,000	4.3	402,300	3.8	47,700	11.9
**Charter & Special	796,000	7.7	965,600	9.0	(169,600)	(17.6)
TRAINS[4]						
***Daily Amtrak	64,300	0.6	32,600	0.3	31,700	97.2
TOTAL	10,378,800	100.0	10,684,200	100.0	(305,400)	(2.9)

Gaming revenue growth has also been severly affected. As Table 7 indicates it grew by only 13% between the second quarter of 1979 and the second quarter of 1980.

TABLE 7



COMPARATIVE SCHEDULE

YEAR TO DATE

GROSS TAXABLE REVENUE

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CARSON CITY	$14,686,477	$12,673,170	$2,013,307	15.9
CHURCHILL	1,829,989	1,443,975	386,014	26.7
CLARK	803,133,789	694,408,529	108,725,260	15.7
DOUGLAS	95,227,085	82,093,909	13,133,176	16.0
ELKO	18,024,882	15,470,922	2,553,960	16.5
ESMERALDA	None	None	None	*
EUREKA	None	None	None	*
HUMBOLDT	3,152,440	2,678,331	474,109	17.7
LANDER	485,592	361,814	123,778	34.2
LINCOLN	None	None	None	*
LYON	552,715	296,337	256,378	86.5
MINERAL	2,138,889	1,700,448	438,441	25.8
NYE	1,409,219	901,026	508,193	56.4
PERSHING	230,751	196,186	34,565	17.6
STOREY	836,356	719,645	116,711	16.2
WASHOE	214,029,663	190,392,430	23,637,233	12.4
WHITE PINE	820,037	665,028	155,009	23.3
TOTAL	$1,156,597,844	$1,003,971,722	$152,626,122	15.2

[illegible]

NOTE: [illegible]

Nevada Gaming Control Board, 1980

This growth rate was slightly above the rate of inflation during that period (9.5%) and represents only a 3.5% increase in real gaming revenues. Several of the smaller casinos in Reno are in very poor financial condition. This has not resulted in major layoffs in the region but has significantly slowed the growth of jobs. From September 1979 to September 1980 gaming employment in Reno grew by only 2.6%. This is in comparison to a 36% growth for the same period in 1977-78.

The static growth in gaming revenues is partly a result of gasoline price increases and partly a result of the 1980 national recession. If and when the recession ends it is likely that gaming revenues will begin growing again, but not at the rates achieved in the late 1970's.

A major weakness of the gaming industry is its reliance on a "legal resource". A stroke of the pen legalizing casino gaming in California could destroy the industry in Nevada. Since the Reno region is so highly dependent on the gaming industry, it is in a very precarious position.

Other trends expected to play a role in the region's future are:

1). Recession. The 1980 recession has severely impacted the region's construction and warehouse-manufacturing industries.

2). MX. Construction of the MX missle system could result in significant growth and resource demands in the Reno region.

3). Resource Constraints. Local agencies have restricted population growth in the region by limiting building permits and increasing utility hookup fees in response to water shortages, limited sewage treatment capacity and environmental constraints.

4) Retirees. There has been an influx of retirees to the region. This trend is likely to continue in the future despite problems in the gaming industry.

These and other factors make projections of population growth a very hazardous endeavor. Nevertheless, Table 8 does contain the population projections felt to be most reasonable. Heavy reliance has been placed on local government projections rather than the State Planning Coordinators. Local governments in Washoe County and Carson City expect their populations to grow much slower in the future due to environmental constraints. The State's projections for the year 2000 have been included for comparison.

TABLE 8
RENO REGION POPULATION PROJECTIONS

COUNTY	1980[1]	1985	1990	2000	2000[2]
Washoe[3]	192,000	246,000	275,000	304,000	468,000
Carson City[4]	32,000	44,000	54,000	73,000	105,000
Douglas[5]	19,500	22,000	27,000	35,000	29,000
Lyon[6]	13,500	17,000	20,000	23,000	9,000
Storey[7]	1,500	1,700	2,000	2,500	2,000
Alpine[8]	1,100	1,800	2,100	2,300	2,300
Total	260,000	333,000	380,000	440,000	615,000
% Increase from 1980	- - -	28%	46%	69%	150%

[1] Preliminary Census Estimates
[2] Nevada State Planning Coordinators Office, 1979 (Except Alpine)
[3] Washoe County Department of Regional Planning, 1980
[4] Carson City Planning Department, 1976
[5] Carson River Basin Council of Governments, 1973
[6] No adequate projections for Lyon County exist. These projections are based on the average growth projected for the other counties. The Lyon County Commissioners' Office concurs with this approach.
[7] Storey County Commissioners' Office, 1980
[8] Alpine County, 1980

PUBLIC ATTITUDES AND VALUES

Complexity is a term which adequately describes the Reno ES area, geologically, environmentally and sociologically. The latter, a category of descriptive human behavorial studies, is manifested in the widely divergent preference variables affecting the lifestyles within the area.

Generally speaking there is an urban - rural dichotomy of area residents, which is fairly self-explanitory. Economic preferences for survival perhaps would be primary in these distinctions. Employment in the gaming industry generates a lifeway quite different from that generated by a ranching career. Philosophical preferences for one area or another, rural or urban, will likewise influence the choice of economic pursuits, as do, functionally, the occupations themselves. The profession and geograpical area moves in a circular pattern of mutual influences.

Behavioral manifestations become almost symbolic, reinforcing the behavior. The cowboy-rancher becomes the rugged individualist, tradition and symbol of the old West. How people relate to the resource within the planning area is based on these philosophical preferences and ethics.

The urban-rural dichotomy is then defined by cultural models. The Reno-Carson City-Minden-Gardnerville population concentrations follow a multiple nuclei theory of urbanization, There is not one center of the city, but several, with outlying business districts in the more distant suburbs. The higher and medium class residential areas are somewhat removed from the "nuisance" of commercial and industrial centers. In view of this it is not surprising that the rural, or semi-rural outlying atmosphere is valued highly. People begin moving to the rural areas to escape the impersonal complex pressures existant in cities. Philosophies are not easily left behind, however. These new rural residents still seek the conveniences of progress within the rural setting. This leads to a series of conflicts involving the resources managed by the Bureau of Land Management.

In general, the urban residents of the subject area are less aware of the Bureau's programs than are the rural. This may be due to the fact that the Bureau comes into personal contact with the public in rural situations more often than in urban settings. Urban populations have varied special interests which fall under federal management. Nevertheless, they have only a vague perception of the Bureau's resources and management. This changes, in part, when each special concern meets a federal control or use conflict.

The public, as a whole, is aware that the Bureau somehow regulates the miners and ranchers. The most visible program concerns the Wild Horse and Burro activities. Network television, radio and newspaper coverage have brought this resource issue to public attention.

Both the rural and urban publics have one common concern - access and its associated controls. However, polarization of interest groups has put the Bureau in the difficult position of trying to please everyone. It has been suggested that the Bureau lacks an effective information and education program to deal with the vascillating public priorities, increasing the general recognition of the need for multiple use management. This should, in turn, increase the public involvement in land use decisions.

As with most government agencies, the public as a whole feels that there are too many controls. These thoughts are directed at all federal agencies in general, not specifically at the BLM. It is the opinion of many, however, that the increasing environmental regulations caused the Sagebrush Rebellion movement. Local level dealings with the BLM are thought to be more favorable than with the Eastern establishment. People who often find fault with the BLM programs and decisions will state that their dealings with local BLM personnel have been cooperative and satisfactory. The local BLM personnel are not blamed for Washington Office orders.

RESOURCE ANALYSIS

The following sections outline some of the major social and economic characteristics of public land uses in the Reno area. Demand projections have been made for most resources. The problems and issues summary which follows this section outlines some of the more important resource conflicts in terms of social and economic effects.

LANDS

Urban-Suburban

There are approximately 230,000 acres of land within the planning area that are identified for urban and suburban expansion. Of this total, 39,000 acres are administered by the Bureau of Land Management, totaling about 17 percent. Much of this federal land is located in Cold Springs Valley, Lemmon Valley and Spanish Springs Valley north of Reno. Other lands lie in the Mt. Rose Highway Small Tract area and the Steamboat area south of Reno. Fish Spring Flat east of Minden-Gardnerville and the foothills surrounding Carson City also contain public lands suitable for community expansion. The controlling factor of such development is the availability of ground water and how this availability is reflected in local planning and zoning. In addition there is much local concern about urban sprawl development in the region.

There is ample private land for future expansion in the planning area. The public lands only represent a small fraction of the total available and suitable for expansion. They are designated for such use because they are intermingled with present or proposed development. Their use may be best realized for recreation and public purposes in support of residential, commercial, and industrial development on the adjoining private lands. Such recreation and public purposes management would be by local government.

Agricultural

There are approximately 15,000 acres of lands within the planning area that are suitable for agricultural development. About 33 percent of this, or 5,000 acres, are administered by the Bureau. These lands are primarily located in Honey Lake Valley north of Reno. Much of Honey Lake Valley has been filed on under the Desert Land Act. However, the State Water Engineer has designated the valley as having limited ground water supplies. Therefore, many, if not all, of the permit applications filed with the State Division of Water Resources for agricultural wells will be denied. The development of lands for agricultural use is not so much controlled by the availability of land with suitable terrain, soils, and climate, but the availability of ground water for irrigation, as monitored and controlled by the State.

The average figures above do not include those agriculturally suitable lands which are more highly valuable for urban and suburban development, as discussed in the previous section.

Utility Systems

There are over 300 miles of rights-of-way on public lands within the unit. It is difficult to determine what percentage this is of the total, due to the vast quantity of rights-of-way on private lands in the Reno-Sparks urban complex and Carson City. As to major systems, it represents about one-half. Major highways traversing the area are U. S. 395 and U. S. 50, Interstate 80 and State Routes 33, 27, and 17. In addition to county roads, many road rights-of-way are being issued to private parties for ingress and egress across public lands to private lands.

Two major electric power transmission lines, 230 KV capability, enter the area from Idaho and Utah. Numerous smaller lines and feeder lines exist throughout the area.

Other major rights-of-way include natural gas pipelines, buried and overhead communication lines, and water pipelines.

Other Land Uses

There are four mountain tops in the planning area that have multiple communications type facilties on them. These four mountains - Peavine Peak, Red Hill, Virginia Peak and McClellan Peak - all have public lands on them. New facilities are presently being placed on all of these peaks, as there is still ample room and facility compatability.

Six sanitary land fills exist within the planning area. Two of these, the Carson City and Douglas County sites, are located on public lands under Recreation and Public Purposes leases. Operation of these land fills is controlled by the State of Nevada to insure adherence to state environmental regulations. There is, therefore, no difference in operational compliance whether the site is on federal or private lands.

Land Use Economic Demand Projections

Urban and Suburban

The population increase anticipated by 1990 will result in an increase in lands needed for such use. The actual amount of lands needed will be dependent on the density of housing. There is an increasing trend towards cluster housing and condominium or townhouse dwelling rather than the standard one family dwelling on its individual one-acre or greater lot. However, one thing is certain regardless of density. There is ample land presently in private ownership to accommodate the projected population increase or even an increase two or three times the projection. The isolated tracts of public lands are not needed nor does their existence in federal ownership impede or restrict development. Although suitable for such development, it is not necessary to accommodate the increasing population. Sales of public lands for development could lead to increased sprawl or leap-frog type development.

Public Purposes

Those tracts of public land within the urban and suburban areas have value for public purposes type uses in addition to their suitability for residential, commercial, or industrial development. These uses include, but are not limited to, school sites, community and regional parks, sanitary land fills, sewage treatment facilities, and general open space or green belts. Most of these needed public purpose type sites have been delineated by local government in their plans and undergo continuous review and revision when necessary.

Agricultural Lands

With the renewed interest in the Desert Land Act, the demand for agricultural lands has greatly increased. New agricultural development is generally a marginal operation in Nevada. Interest under this form of agricultural entry is mainly based upon the hype given by the press in regards to obtaining "free government land". Most applicants do not have any agricultural background, and their sole interest in the Act is to acquire lands for other purposes, such as future development. Many times, the lands applied for lie adjacent to similarly suitable private lands with no agricultural development having taken place on them. The interest and demand for the lands is apparent, but the feasibility is questionable. On the other hand, in a recent survey (GCFN, 1980) Reno area respondents expressed concern over the heavy reliance on gaming, and selected agriculture as the industry they would most like to see expanded.

Public Attitudes

Municipal and county planning commissions have often indicated an interest in the retention of federal control over specified lands to serve community needs. The Reno-Carson City-Minden-Gardnerville area in particular requires a buffer zone for future growth and other local recreational needs.

Since the advent of the Sagebrush Rebellion, it is a commonly held opinion by many urban and rural residents that the public lands would be better controlled by the State than by the Federal Government. Given the universal distrust of the Federal government and bureaucracies, and the fact that Nevada is one of the last strongholds of rugged individualism, the "frontier spirit", this surfacing of state's rights is not surprising. This attitude naturally has stronger proponents among the rural populations. Generally, urban residents offer only weak support for this issue since they are further removed from the actual land management.

Groups like the Sierra Club hold the opposing view. They fear that all lands would be transferred into private (the ranchers) hands, and all access to recreational and critical environmental areas would be blocked[1]. Many ORV enthusiasts oppose the Sagebrush Rebellion for much the same reasons. Wildlife managers and other interested individuals worry about the future of the wildlife populations if the land were to be managed by the state.

The ranchers would like to see livestock become the primary land use. The minerals industry prefers to see their interests dominant. The general public, each with their own special concern, views access to the public lands as the main issue. As a rule, opposition to restricted access is not violent or strong; rather it is a selfish approach to special interest orientation[2].

This latter issue surfaced several years ago when Lockwood closed off access to certain areas near a dump east of Reno. Concerned citizens banded together to form "No Lock", an organization to oppose this action on a united front. This group has not been active of late.

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[1] Source: Public meetings on access and Sagebrush Rebellion, Reno and Elko..Sen. Warren L. Monroe spokesman.

[2] Source: Personal interviews: Tina Nappe, Sierra club; Rose Strickland, Grazing Advisory board; Bob Erickson, Legislative Council Bureau.

MINERALS

The minerals industry was the major element in the region's economy for many years. Since that time it has become subordinate to the gaming industry.

A wide range of important locatable minerals occur in the region. Leasing Act minerals are limited to geothermal resources. A wide range of salable minerals exists in the area and contributes significantly to the region's construction industry.

The trend in the recent past has been one of generally increasing prices for minerals. Improvements in technology are making the extraction of minerals from lower grade and harder-to-get-at ores economically feasible. The result has been an upsurge in prospecting activity in the last few years. The sharp rise, particularly in gold and silver prices, has given added impetus to prospecting activities in the resource area--which may signify the beginning of a cyclical upswing in the importance of the minerals industry.

A. Locatable Minerals

BLM Policy and Responsibility

The BLM takes no active role in encouraging exploration for or development of locatable mineral resources. The BLM is charged with the responsibility for determining the validity of mining claims, for approving mineral patents, and for prosecuting cases of suspected mineral trespass when and where such cases and actions involve public lands under its jurisdiction.

It is also the responsibility of the BLM to insure that the closing of public lands to all forms of mineral entry occurs only when it has been determined that the best use of the land is for some purpose other than the exploitation of mineral resources.

Locatable minerals known to occur in the region include those containing gold, silver, antimony, barite, mercury, diatomite, uranium, copper, clays, molybdenum, tungsten, silica, rhyolite, lead, and zinc. The metalic commodities are generally milled to separate the valuable constituents from the waste. Usually the non-metallic minerals are mined and utilized "as is", or with a minimum of benefication, although there are exceptions.

B. Saleable Commodities

BLM Policy and Responsibility

The Bureau has complete control over disposition of salable mineral materials to individuals, companies or government agencies. Furthermore, the Bureau can and does control the methods of material site access and location, and stipulates the method and manner of site rehabilitation upon completion of materials removal.

The Bureau has the responsibility to provide for salable materials that will serve the public good. The demand for construction materials is present and continuing. The Bureau should designate and develop community sand and gravel pits. The extraction of other salable commodities, such as stone, "DG", semi-precious gems and stones (where not a locatable resource), should be allowed within the framework of good land management principles.

No data is available on total sand and gravel use in the region. Production from public lands during calendar year 1980 totaled about 270,000 cubic yards of decomposed granite, native barrow, and topsoil, and about 50,000 tons of building stone. Total in place value was about $75,000. This is only a small proportion of final market value. Transportation and processing substantially increase the value of these products.

C. Leasable Minerals (Oil, Gas, Geothermal, etc.)

BLM Policy and Responsibility

The United States, through the Mining And Minerals Policy Act of 1970, is currently involved in establishing long-term policy that is geared toward ensuring that the national economy continues to have abundant supplies of minerals at reasonable cost, within the confines of environmental protection, and at acceptable levels of national security. In carrying out this policy, it is the BLM's responsibility to make public lands available for mineral leasing.

Resource Evaluation and Estimates

1. Oil and Gas

The study area has no viable potential for the occurrence of oil and gas.

2. Geothermal

The entire study area is potentially valuable for the occurrence of geothermal energy of low to moderate temperatures. Geothermal resources are useful for electrical generation, space heating, air conditioning, and product processing. By-products of some geothermal electrical generation systems include desalinized water and several important minerals, such as sulfur, mercury, and lithium salts.

Economic reserves of geothermal resources generally require a subsurface temperature above 90°C (194°F). Systems with temperatures ranging from 90°C to 150°C (194°F-302°F) may be useful for space heating and product processing, while systems with temperatures greater than 150°C (302°F) may be useful for electrical generation.

Geothermal resources are similar to other energy resources in that until actual exploration and development begins it is difficult to quantify reserves and the development measures necessary to begin production. As a consequence, quantitative data is lacking on geothermal energy in the resource area as it is in most of the western states.

The Steamboat Springs geothermal area is a conspicuous example of this type of resource within the study area. The area's real potential, however, lies in those heat sources which underlie the surface and are not manifested by hot springs or other thermal features at the present time.

The use of Nevada's geothermal resources to generate electricity was not developed in the past because alternative sources of energy have been inexpensive enough to make development of new technologies economically impractical, and because Nevada's geothermal resources are all highly mineralized. The Geysers KGRA, near Sonoma, California, is the source of the only geothermally powered generating plant in the country. This plant uses steam which has a very low mineral content and consequently can use conventional generating equipment. The mineralized nature of Nevada's geothermal resources requires the development of new technologies before commercial electrical generation can be undertaken. (Eadington, Taylor, and Tissier, 1979.)

Sierra Pacific Power and a consortium of several other northwest utility companies are presently studying the feasibility of constructing a pilot 10 megawatt electrical generating plant in western Nevada, using geothermal steam. It would not be sited within the subject study area.

A study in Oregon indicated that geothermal heating systems could provide space heating at 1/10 the cost of fuel oil (Geo-Heat Utilization Center Quarterly Bulletin, May, 1977). This would be about 1/5 the cost of natural gas. Using these ratios, a home heated in Reno or Carson City for $80 a month from natural gas could be heated for $16 from geothermal. Costs would vary significantly, depending on temperature, depth, and water chemistry of the geothermal source.

Income and Employment

According to the Nevada State Inspector of Mines, there are 885 persons employed in mining and milling in the region. Although this represents less than one percent of total employment in the region, as a whole, it is very important to Storey County economy, and, to a lesser degree, the Lyon County economy. Of particular importance are the gold and silver operations in Storey County. The Gooseberry Mine, with 180 workers, and the Huston International Mine, with 125 workers, are the largest in the region.

Total direct and indirect employment from the mining industry is about 2,300, or just over one percent of total employment.

Mining income totaled $16 million in 1978. This was one of the highest paying industries in the region with an average income of about $18,000, compared with the overall average of about $10,000.

By type, about 40% of mining employment is in metallic minerals--this accounts for about 350 workers. Of the non-metallic minerals, about 50%, or 250 workers, are engaged in sand and gravel operation. Of these workers about 25%, or 65 workers, are dependent on BLM community pits. Using the average income in the mining industry, it can be estimated that about 1.2 million dollars in income is generated from BLM sand and gravel sources.

Projections

The region's mining industry has been subject to several boom and bust periods. The unpredictable nature of the industry makes projections about future activity speculative, at best. However, several generalizations can be made. The current boom in locatable minerals is likely to continue in the short term. Demand for geothermal energy will continue to be strong throughout the planning period. Demand for sand and gravel from public lands may follow closely the level of population increase--about 46% between 1980 and 1990, from 270,000 cubic yards to 390,000 cubic yards.

Public Attitudes

The public generally is unaware of either the bredth or volume of mining activities in the Reno ES area despite the fact that there are some forty active mining operations and a significant upsurge of exploration activities. The mining profession as a whole is not viewed as possessing high social prestige as are such occupations as law, medicine, etc. Although the public acknowledges its importance, the mining industry is largely taken for granted; simply assumed to be there supplying the raw materials necessary to provide our standard of living. Historically the mining industry has enjoyed few restrictions to its activities and has therefore, made little attempt to educate the public to its needs. Consequently, people are largely ignorant of the functioning and requirements of a healthy mining industry and have been generally apathetic to objections raised to the numerous relatively recent, regulatory restrictions imposed upon mining activities.

It has been the complaint of minerals professionals that the public demands the products of mining yet deplores the necessary environmental damage incident to obtaining these products, and in fact, encourages restrictive measures which hinder and in some cases prevent the acquisition of these products. Minerals people feel that they are being forced by increased costs incident to regulatory restrictions to rely more and more on foreign sources, (some of which are at best politically unstable), for significant quantities of minerals critical to this country's economic and political well being. Yet they have expressed that efforts on their part to alert the public to the danger of this course have met with little success and resulted in even more unnecessary rules and regulations, no concrete national minerals policy, and a general low ranking for minerals in the scale of management priorities. Miners by contrast rate their contribution to both local and national economies very high.

Opponents of the mining industry include such groups as the Sierra Club and Nevada Outdoor Recreation Association (NORA). The conflict of philosophies can be reduced to one statement of fact: Geologists are proponents of the mining industry for the survival and advancement of our present society; conservationist groups oppose unrestricted mineral developments for the preservation of the existing environment. There appears to be no urban - rural dichotomy. Geothermal development is viewed somewhat more favorably by the majority of the public. An element of hope of an alternate energy source enters here; this could reduce heating costs, and be economically beneficial for other uses as well.

Forest Products

Use Analysis

Stands of aspen, Utah juniper, pinyon pine - Utah juniper, mountain mahonany, and mixed conifer are found in the Reno Environmental Impact Statement (EIS) area. Total and public land acreage estimates are presented in PAA Table 9. The estimates of forested acreage on public private lands were derived by using a dot grid on othrophoto quads.

PAA TABLE - 9
FORESTED ACREAGE IN THE RENO EIS AREA

FOREST TYPE	TOTAL ACRES	PUBLIC LAND ACRES	% Public Land
Mountain Mahogany	3,335	2,620	78
Quaking Aspen	475	175	36
Utah Juniper	79,600	48,800	61
Mixed Conifer	11,421	5,870	51
Pinyon - Juniper	214,220[1]	127,360	59

[1] The vast majority of these private lands are comprized of Indian allotments that are closed to public use.

The majority of the forested areas within the Reno EIS area are classified as non-productive -- non-commercial forest land. Production of forest products in these areas is limited to fuel wood, fence posts, and Christmas Trees. Since BLM's thrust is to provide woodland products for the general public as opposed to commercial interests, most of the products go to family cutters and a very small portion goes to commerical cutters. Carson City, Gardnerville and Reno are the population centers which make up the market area. This market area is shared with various Forest Service districts. Carson City and Gardnerville areas are shared with the Toyiabe National Forest and the Reno area is shared with the Plumas National Forest. PAA Tables 10A and 10B present information on permits issued for forest products within the market area by both BLM and Forest Service.

Productive - commercial timber within the Reno EIS area is either inaccessible or located within or near developed recreational areas. For these reasons BLM does not have an active timber sales program.

PAA TABLE 10A

PERMITS ISSUED FOR FOREST PRODUCTS WITHIN THE RENO EIS MARKET AREA BY BLM

FISCAL YEAR	FUEL WOOD (CORDS)	CHRISTMAS TREES	POSTS	BLM RECEIPTS	MARKET[1] VALUE
1975	1,924	No Data	125	$ 5,797	$ 19,490
1976	1,622	10,561	0	15,427	69,025
1977	1,716	11,041	0	16,189	72,365
1978	1,396	13,543	0	17,731	81,675
1979	2,717	14,203	50	22,354	98,185
1980	4,005	12,533	145	24,548	102,715

[1] MARKET VALUES FOR EACH PRODUCT AS FOLLOWS:

FUEL WOOD	$10.00/CORD
POSTS	$ 2.00/POST
CHRISTMAS TREES	$ 5.00/TREE

SOURCE: BLM ESTIMATES (1980 VALUES FOR UNCUT IN-PLACE PRODUCTS)

PAA TABLE 10B

PERMITS ISSUED FOR FOREST PRODUCTS WITHIN THE RENO EIS MARKET AREA BY FOREST SERVICE[2]

YEAR	FOREST	FUEL WOOD CORDS	CHRISTMAS TREES	% INCREASE OVER PREVIOUS YEAR
1980	TOYIABE	18,000	NO SALES	20%
1980	PLUMAS	53,406	5,000	70%

[2] PERSONAL COMMUNICATION: BOB MONIZ, PLUMAS N.F. AND LON KIRBY, TOYIABE N.F.

It should be noted that the Forest Service does not charge any fee for the vast majority of their fuel wood. The National Forest did sell about 10,000 cords of wood last year. The wood they provide is straighter and lighter, making it easier to cut, load and transport. For these reasons people are more willing to travel longer distances to secure their fuel wood.

Unauthorized cutting of post, Christmas trees and fuel wood is known to occur in the area due to remoteness from the district office and past customs. No estimate of the quantity of forest products removed by unauthorized cutting is available. In some areas it could be substantial.

Economic Significance

The Bureau's contribution to total production of woodland products is much more significant in Carson City than in the other population centers in the EIS area. BLM's share of the market is about 17 percent. However even in the Carson City area few commercial sales are made. Over 90 percent of the sales made are non-commercial and therefore do not generate a significant amount of direct income or employment.

In 1980 approximately 1,000 of the 12,533 Christmas trees were sold to commercial cutters. The average market value was about $5.00 per tree or $5,000 total. Of the 4005 cords of wood sold in 1980, about 100 cords were cut commercially. The average market value per cord was about $10.00 or $1,000.00 total. With the retail price of the former being $12.00 and the latter being $80.00, some income was generated. However, considering the economy as a whole, this income was insignificant.

Indirect income and employment resulting from the annual production of woodland products is very difficult to estimate. It should be noted that the harvesting on a noncommercial basis by many residents results in lowering the dollars flowing out of the area for fuel, fence posts, and Christmas trees. It should further be said that the production of woodland products in the Reno EIS area undoubtedly affects the sales of related products and equipment. Some of this equipment would include chainsaws, woodburning stoves, etc.

As Table 9 indicates the total inplace market value of EIS area public land forest products totaled $103,000 of which about 60% was from Christmas trees and 40% from fuelwood.

On a per-acre basis Christmas trees return about $175 in designated areas and fuelwood returns about a $50 in terms of market value.

Demand

As the cost of other energy sources has increased, fuelwood as an alternative source of energy has become more attractive. The dramatic increase in cordwood sales the past few years attest to that.

Another barometer by which fuelwood demand is measured, is the air pollution it creates. In Carson City and Reno the pollution can be either smelled or visually observed from any street corner. The demand for Christmas trees has also increased. Last year (1980) this was altered by the fact that permits were limited.

Demand projections for forest products are limited to fuelwood and Christmas trees since these are the only significant products. PAA Table - 11 contains 1990 and 2000 projections as well as the linear regression equations used for the projections.

PAA TABLE 11
FOREST PRODUCTS DEMAND PROJECTIONS

	FUELWOOD	CHRISTMAS TREES
1990 Projection	7,005 Cords	29,122 Trees
2000 Projection	10,825 Cords	42,550 Trees

Regression Equations:

$y = -635 + 382X$	$y = 2,266 + 1342X$
$r = .73$	$r = .96$
Where y=Cords of wood and X=year (5=1975,etc)	Where y=Number of Trees and X=year (5=1975,etc)[1]

Source: PAA Table 10

[1] 1980 Christmas tree harvest was not included because of tag limits.

At present, it is estimated that harvest can be about 5,000 cords[1] within the Reno EIS area on a sustained yield basis. This is somewhat of an underestimate because it only takes into account areas that are accessible now. The construction of roads in certain areas could raise this figure to 10,000 cords[2] yearly. If that were the case BLM could meet anticipated demand for 1990 and almost meet the demand for 2000. There is little doubt that somewhere down the line, permits will have to be limited and put on a first come basis or some type of lottery system. These measures may have to be taken but probably not until sometime after 1990.

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[1] $\dfrac{\text{Usable acres (6,000 X 5 cds/acre)}}{\text{60 yrs (Rotation age of partially cut stands)}} = 5000$ cd/yr

[2] $\dfrac{\text{Total Acres (120,000) X 5}}{60} = 10{,}000$ cds/yr

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Public Attitudes

The general public contact with this program involves Christmas tree cutting and firewood permits. Here again, access to the public lands is critical. Both urban and rural populations have become increasingly dependent on wood fuels as a heat source. This of course, has caused a great amount of air polllution (particulate matter) within concentrated urban areas. However, the economy of wood fuels is viewed favorably by urban residents and they are willing to forfeit a pollutant free atmosphere. Rural residents are not yet faced with this type of pollution. Thus the Bureau is pressured to provide wood cutting areas for an increasing number of persons requiring this heat source.

The residents of the rural areas are also concerned with the forestry products due to the need for poles and posts. Local ranchers have expressed some worry over supply of suitable stand for posts, but this is not an overwhelming issue.

Conservationist groups have expressed an interest in the Bureau's management of these areas. They wish to be assured that indiscriminate and detrimental harvesting of forestry will not occur.

RANGE MANAGEMENT

Livestock

Regional Significance

Ranching is of major historical importance to the Reno area. It is a traditional way of life that has existed in the region for more than a century. Its importance in terms of the region's economy, however, has declined considerably since the early 1900s. Industries such as gaming and warehousing have pushed ranching into the background. At present only 0.4 percent of the regions income or $7.8 million is derived from ranching.

As other industries have grown in importance the market value of lands used for ranching has not kept pace with the value of lands utilized for subdivisions or other mucicipal/industrial uses. As a result, there has been and will continue to be significant conversion of ranch land to other uses. This has major implications for BLM grazing management. The subdivision of the Red Rock Ranch has forced major modifications of the Antelope Mountain AMP. It is likely that similar actions will occur in the future.

Gross livestock production in the region amounted to about $25 million in 1978. More than half of this ($14 million) was produced in Lyon County where ranching is of major economic importance (it accounted for 11 percent of total income). Douglas County ranked second with $7 million in production but only 1 percent of total county income.

Ranching did account for most of the region's agricultural production. Hay was a distant second with about $5 million. More than three quarters of this was produced in Lyon County. Dairy products were also important with $4.7 million produced in 1978. About half of this total was produced in Douglas County.

In 1979 there were 79,000 cattle in the region - 14 percent of Nevada's total and 24,000 sheep-21 percent of the State total. On a national level, Nevada accounted for less than one percent of cattle and sheep numbers (University of Nevada Cooperative Extension, February, 1980).

The health of the region's ranching industry depends to a large extent of calf prices. These prices as well as cattle numbers have followed an established cyclical pattern (see figure 2). On a national level cattle numbers have followed this pattern since the late 1800's (see figure 3). There were no significant price increases in 1980 but prices did remain well above the level of a few years ago and cattle numbers continued to increase. This would indicate that the current cattle cycle has not reached its peak yet, i.e., numbers should continue to increase.

Sheep populations on a national level appear to have ended a long period of decline (Figure 4). In the Reno region the decrease continued into 1980 because of the increasing pressure of human population growth and ranch labor shortages.

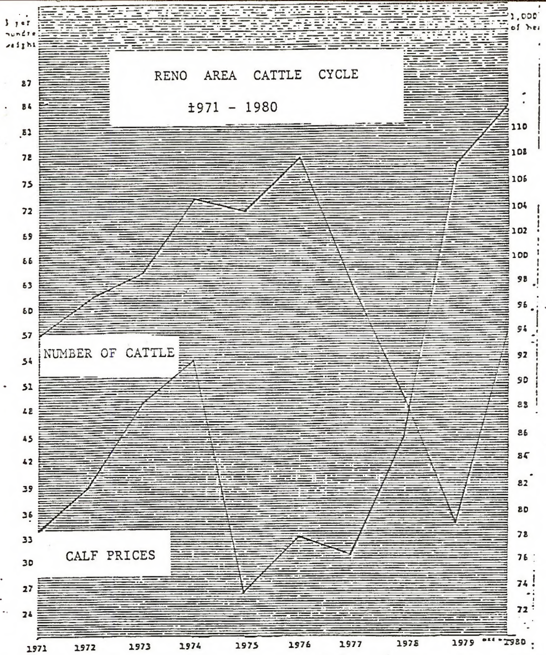


Figure 3

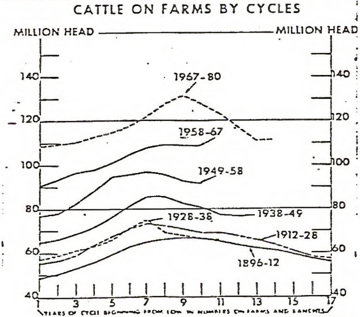
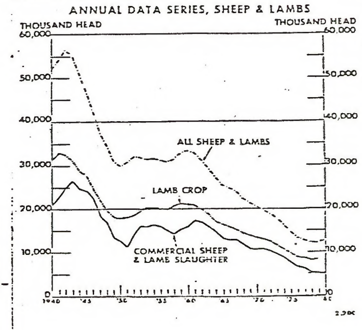

CATTLE ON FARMS BY CYCLES

Figure 4


ANNUAL DATA SERIES, SHEEP & LAMBS

Public Land Significance

Livestock have been using about 47000 AUMs of public land forage in the Reno EIS area. This accounts for about 5% of the total forage requirements in the six county region. Of the 350 cattle ranchers in the region, 37 have been actively using public land forage. Their average dependency on public land forage is about 20%. Since many of the grazing allotments include mixed parcels of private range, BLM in effect controls grazing on these private lands due to the prohibitive cost of fencing these lands. Livestock have been using about 18,000 of these AUMs. The total public and "tied" private AUMs used have been about 65,000. This accounts for about 7% of the total regional forage requirements and about 30% of the forage requirements of the ranches using public land forage.

Ranch Characteristics

The public land ranches have been broken into four categories to facillitate analysis. These categories are: 1. Cattle operations on public lands year long. 2. Cattle operations on public lands during the summer with greater than 9% dependency. 3. Cattle operations on public lands during the summer with less than 9% dependency. 4. Sheep operations. Ranch budgets and monthly forage use tables for a "typical" ranch in each category have been developed. Although each individual ranch has its own characteristics which vary significantly from other ranches, it is felt that the "typical" ranches used in this analysis adequately represent the majority of ranches in their category. The information used to develop these "typical" ranches was obtained from BLM operator files, the Economics, Statistics, and Cooperatives Service (ESCS), Cooperative Extension agents, and local ranchers.

Most of the ranches using public lands in the Reno region are cow-calf operations. Calves are born in the spring and sold as feeders in the late fall at an average weight of 450 lbs. Cattle are generally moved to public lands in April or May. They graze these lands until September or October. Some ranches also have their cattle on private meadows or Forest Service lands during this periods. During the late fall most cattle graze on private meadows or hay residue. Hay is the primary source of feed from mid December through April or May. Sheep operations follow a similar pattern (Figure 5). A key to the profitability of these operations is the length of the hay feeding season. Since hay is generally the most expensive source of feed (current price is about $100 per ton) the earlier the ranchers can get their livestock onto meadows or rangeland, the better.

Table 12 lists the ranches by category with Class 1 demand, active (available) and licensed (3 year 77-79 average use) AUMs as well as estimated dependency on public land forage and location of base.

As the table indicates, there is a wide variation in the number of AUMs used by each operation. In fact, the ten ranchers with the largest use accounted for about 80 % of all AUMs used on EIS area public lands. Ranches with the heaviest use were generally based in Washoe County. Ranches based in the Carson Valley area or Douglas and Alpine counties were much less dependent on public lands.

Dependency varies significantly by month. Although this information has not been developed for each individual ranch, it is available for the "typical" ranch categories as displayed in Figure 5.

TABLE 12
OPERATOR CHARACTERISTICS

LIVESTOCK OPERATIONS	CLASS I DEMAND	ACTIVE AUMS	THREE YEAR AVERAGE LICENSED AUMS	AVERAGE DEPENDENCY ON PUBLIC LAND AUMS	AVERAGE DEPENDENCY ON PUBLIC PLUS "TIED" PRIVATE AUMS	BASE COUNTY
CATTLE YEAR LONG						
LARUE	6942	6942	7503	50%	55%	WAHSOE
FISH SPRINGS	7368	5062	5017	55%	60%	WASHOE
INTER-MOUNTAIN	4934	4934	4783	90%	90%	WASHOE
CAPURRO, JOE	2873	2873	2453	45%	75%	WASHOE
DEPAOLI	1773	1766	1766	25%	50%	WASHOE
	23890	21577	21522	55%	65%	
HIGH DEPENDENCY						
LUCKY HEREFORD	8447	8447	4224	50%	50%	WASHOE
SARALEGUI	1176	1176	1180	25%	35%	LASSEN
BOEGLE KNOX	1312	1277	1097	65%	85%	WASHOE
GASPARI	1246	1246	1036	15%	25%	LASSEN
OPPIO	562	428	580	25%	45%	WASHOE
GARAVENTA	429	429	580	20%	40%	WASHOE
EVANS	693	596	478	45%	45%	WASHOE
CANTLON	429	429	429	10%	25%	LASSEN
CAPERRO, HERB	478	330	332	30%	35%	WASHOE
NEED MORE	300	300	300	50%	50%	WASHOE
URRUTIA	278	193	193	25%	25%	WASHOE
	469	404	188	10%	45%	WASHOE
	15819	15255	10617	30%	40%	
LOW DEPENDENCY						
DANGBERG	2168	1731	773	4%	4%	DOUGLAS
FULSTONE	750	750	500	2%	2%	LYON
ROLLING "A"	772	772	416	5%	7%	LYON
DRESSLER	251	251	251	2%	4%	DOUGLAS
SPRINGMEYER	365	235	234	8%	30%	DOUGLAS
PARK/	219	219	219	1%	1%	DOUGLAS
SMITH	300	300	105	3%	6%	ALPINE
ANDERSON	250	250	83	4%	4%	CARSON CITY
BACON	220	220	73	1%	2%	DOUGLAS
WINTERS	322	204	68	6%	6%	LYON
RICCI	374	374	65	4%	4%	LYON
HALL	60	60	60	1%	3%	ALPINE
CALLAHAN	50	29	29	5%	10%	WASHOE
CHAVES	950	26	20	1%	1%	LYON
GANSBERG	40	40	16	1%	1%	ALPINE
	7091	5461	3114	3%	5%	
SHEEP OPERATIONS						
BUCKEYE	5348	5159	5159	50%	80%	DOUGLAS
SARIO	5394	5946	3541	15%	20%	MONO
BORDA	4575	4010	1370	25%	35%	CARSON CITY
LA BORDE	1098	1187	871	5%	40%	SAN JOAQUIN
HOFFMAN	300	300	707	10%	55%	PLACER
	16715	16602	11648	20%	35%	
INACTIVE OPERATIONS						
CALLAHAN, JAMES	50	29	--	--	--	WASHOE
MONTE CRISTO	205	205	--	--	--	WASHOE
WILCOX	202	202	--	--	--	WASHOE
GONI		LEASED	TO	LABORDE		
STEWART	250	150	--	--	--	CARSON CITY
LIST	77	72	--	--	--	CARSON CITY
HEIDENRICH	139	96	--	--	--	CARSON CITY
	923	754	--	--	--	
TOTAL	64438	59649	46901	20%	30%	

:gure 5
:no EIS Area
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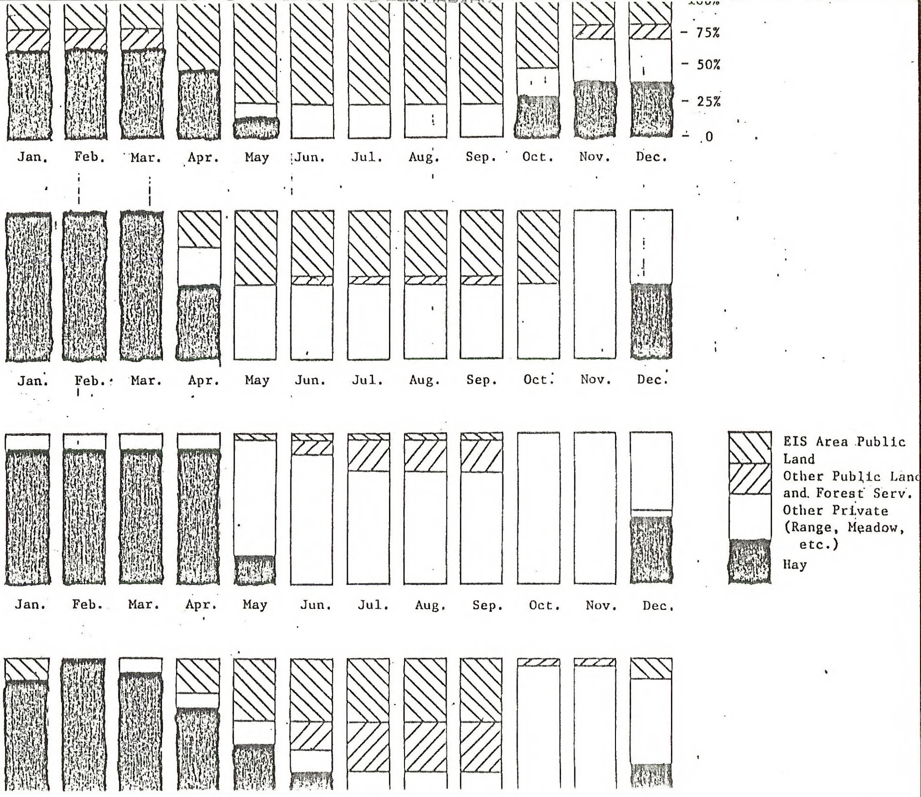

Ranch Budgets

Table 13 summarizes the preliminary ranch budgets developed for the Reno area. Sheep ranches were the most profitable on a per ranch and per AUM basis. Marginal net benefits per public land AUM ranged from about $9 per AUM for the year long and high dependency cattle ranches to $14 for sheep ranches. The average was about $10. Net benefits consist of labor and proprietors net income plus returns to BLM in grazing fees. They represent the monetary benefits of each additional AUM of public land forage. Ranch proprietors net income increased by about $6 for each additional AUM. These figures should be considered rough preliminary estimates pending further review of the budgets and development of linear programming models of the ranches. A more detailed breakdown of the budgets is contained in Appendix B .

TABLE 13
SUMMARY OF RENO PRELIMINARY RANCH BUDGETS
1979

	CATTLE RANCHES					
	YEARLONG	HIGH DEPENDENCY	LOW DEPENDENCY	SHEEP RANCHES	AVERAGE	TOTAL
NUMBER OF RANCHES	5	12	15	5		
NUMBER OF HEAD PER RANCH	650	260	530	4500		
GROSS REVENUE	$134,000	$58.000	$129,000	$261,000	$125,000	$4,600,0
COSTS[1]	106,000	40,000	29,000	203,000	91,000	400,0
NET INCOME	28,000	18,000	40,000	59,000	34,000	1,200,0
LABOR INCOME	20,000	5,000	8,000	37,000	12,000	500,0
NET LABOR AND PROPRIETORS INCOME	48,000	23,000	48,000	96,000	46,000	1,700,0
GROSS REVENUE PER AUM	12	12	14	19	14	- -
NET INCOME PER AUM[2]	5	5	7	9	6	- -
NET EARNINGS PER AUM[3]	7	8	9	12	9	- -
NET BENEFITS PER AUM[4]	9	9	11	14	10	- -

[1] Includes cash costs plus depreciation.
[2] Represents marginal proprietors income per public land AUM.
[3] Represents marginal labor and proprietors income per public land AUM.
[4] Represents marginal labor and proprietors income plus BLM fee per AUM.

Livestock Multiplier Effect

On a regional basis each AUM contributes not only to the ranch sector production, but also, through the multiplier effect, to other sectors of the regions economy. For the Reno economic region, as specified by the Bureau of Economic Analysis (BEA), the multiplier for the livestock industry is 2.85. Thus for every dollar of gross livestock revenue produced there is an additional $1.85 in indirect revenue produced in other sectors of the regions economy.

Gross direct and indirect output produced by the 37 active public land ranches was about $13 million in 1979. Of this amount $2.6 million can be attributed to public lands ($13 million X 20% average dependency = $2.6 million). Total direct and indirect earnings (net labor and proprietors income) amounted to about $4.2 million of which about $900 thousand can be attributed to public land forage.

On a per AUM basis marginal gross direct and indirect revenue was about $40 and marginal direct and indirect earnings were about $13.

Ranch Employment

Using an average wage of $2.72 per hour for hired farm workers, the full time equivalent (FTE) employment of the 37 public land ranches was about 70. Including the ranch proprietors the total is 106. It should be noted that the total number of workers on the ranches was greater than 70 because many were part-time summer employees.

Employment is also subject to the multiplier effect. Total direct and indirect employment (including proprietors) from production by the 37 active public land ranches was about 215 in 1979.

Ranch Value

Although the BLM does not recognize a legal capital value for grazing privileges, they have acquired a de facto market value. This value for Reno area grazing privileges is about $40 per AUM. Based on the number of public plus "tied" private AUMs in the EIS area, grazing privileges are worth about $3 million.

Grazing allotments have value because BLM has been charging a grazing fee less than market value. Ranchers have been willing to pay for the privilege of using these allotments at less than the market rate.

BLM is in the process of raising grazing fees to market value by way of a formula which takes into account the cost of production. This formula may prevent the full market value from being achieved but the increases that do occur should reduce the capital value of grazing privileges.

Reno area capital values may currently be affected by the uncertainty associated with forage use levels in the planning/EIS process.

A change in the number of public land AUMs would not only affect the sales value of the ranches, but also the ranchers ability to obtain loans. A decrease could have severe impacts on ranchers that rely heavily on borrowed funds. Not only would their ability to meet payments be reduced by a drop in income, but also they could be caught in a credit crunch due to a lower collateral value of their allotments.

Demand Projection

The U. S. Department of Agriculture (Gustafson, 1980) expects that cattle numbers will increase by 13% between 1980 and 1987 and then level off. Sheep numbers may increase slightly on a national level but probably not locally. If the Reno area public lands are to maintain their current share of production, about 51,000 AUMs will be required by 1987. However, since this is below the Class I Demand (total preference) level, livestock forage demand should be at the Class I level of 66,000 AUMs.

At present a signigicant amount of voluntary nonuse is being taken in allotments close to urban areas, particularly near Carson City and Washoe Valley. It is unlikely that public land forage would be used in these areas even if production increased. Demand will be likely to remain strong in the more remote areas of the EIS region.

Local trends likely to affect forage demand by livestock operators include : 1. Price: Grazing fees have increased sharply in the past few years but are still below market value. The current price of $2.36 is below the estimated Reno area market rate of $3 to $6 per AUM.

2. Quality: Forage quality is of major importance to operators. In areas where quality is low such as in wild horse areas, operators are taking voluntary non-use. 3. Human Activity: In areas with heavy human activity the cost of raising livestock increases significantly (primarily because of vandalism) - this will reduce demand. 4. Base Property: In some areas base property is being converted to subdivisions. This could increase dependence on public land or eliminate some ranches from active operations. 5. Water: In many areas of the region water rights are being converted from agriculture to municipal and industrial uses.

Public Attitudes

The livestock industry in the area is rooted in historical tradition, and as such, is perceived as an integral part of the Nevada lifestyle. The residents of the urban centers give little thought to the actual economic contribution of livestock to the overall welfare of their community or the state.

Those special interest groups that concern themselves with environmental quality worry about the future of Nevada in terms of the condition of the rangelands. They view the livestock industry in a very negative manner, feeling that total depredation of the range will occur unless the Bureau's management tightens controls on ranchers, especially in trespass cases. However, the rural areas place a much higher value on the industry's input to the local economy. Both urban and rural feel that the livestock industry is essentially "Nevada". Beef is American and no matter Nevada's percentage of the national production, it is a legitimate contribution.

The urban concentrations of Reno and Carson City more readily admit the significant influence of tourism and gaming on the local economy. The extreme rural areas, see loss or reduction of grazing privileges on public lands as economically harmful; both to the livestock industry as well as the local economy.

In general, both rural and urban residents place a positive value on the social and cultural aspects generated by the ranching lifestyle. The clean and healthy rural community atmosphere is highly conducive to the solidarity and reaffirmation of the family/extended family units. This association is valued in a society where the existence of the family itself is considered tenuous at best. Delinquency and crimes are mentioned as being less prevalent in ranching communities than in urban centers.

The current of the lifestyle is thought to be traditional and ordered, moving at a slower, less frantic pace. Education is a more disciplined function of old, pragmatic values and subjects. Recreation and leisure time are more often spent within the primary family group than with peer or other secondary units.

Other positive attributes cited to relate to ranching lifestyle include the following; self-reliance and individualism, and, ironically, a greater mutual dependence on neighbors within the rural community; the opportunity to work close to nature; being able to escape big city pressures; and, opportunity to actually see the results of one's labors. All these attitudes serve to reinforce the cultural norm that rural living (ranching) is a worthwhile lifestyle.

Even many urban residents have a goal of moving to a rural setting, "having a couple of horses and a garden". The traditions of ranching and the American cowboy have glazed the livestock industry with a symbolic valuation, as a part of the Old West tradition.

Wild Horses and Burros

The wild horse population on public lands is estimated to be 54,000 head. Of this, approximately 32,000 are in the State of Nevada. Carson City District has management responsibility for an estimated 5,000 head and about one fifth (1,000 head) are in the Pyramid, Long Valley, and Pinenut Planning Units. These horses occur in the Flanigan, Sand Hills, Pah Rah, Jumbo, Pinenut and Buckskin Wild Horse Areas. The wild horses have been increasing since 1971 when the Wild, Free-Roaming Horse and Burro Act was passed, but in the Pinenut Wild Horse Area, may be becoming stationary or possibly declining.

First estimates will be made of the value of an adopted horse. The horse adoption program yields the only quantifiable production from the wild horse program. The estimates are:

1. Low end value - An example of a low end value is for a mare that is adopted for the use as a brood mare for producing mules. The estimated value for such a mare is $350.00. The costs for such an animal are the $25.00 charge for veterinarian costs at time of adoption and the estimated $100.00 cost of rounding up the animal from the range. This makes the net value of the horse $225.00.

2. High end value - The example for the high end value is an adopted leisure horse. The extimated value of this type of horse is $900.00. Again there is the $25.00 veterinarian cost, the estimated $100.00 cost for roundup and an additional cost of $350.00 for breaking and training. The net value of the horse is $425.00.

Other uses for an adopted horse may include a brood mare for horses or a personal pack horse. The values for these animals are expected to be somewhere between the low end and high end values shown. Using the low end and high end values as extremes, then the midpoint value is ($225. + $425) divided by 2, which equals $325. This value can be expressed in terms of AUMs for comparison with livestock and wildlife. Since wild horse populations have been increasing between 5 to 15 percent per year when optimum numbers are achieved there will be a need to remove the surplus from the range to prevent over utilization of the forage. A quantifiable economic value of these herds can be expressed in terms of this annual production. At this time these excess animals are disposed of through the adoption program. If the BLM removed the excess animals at a 10 percent annual removal rate, then for each horse removed 10 animals would remain on the range. Each of the horses consumes 1.25 AUMs per month for 12 months, totaling 125 AUMs per year per horse removed and adopted. The midpoint value of an adopted horse is $325.00; divided by the 125 AUMs this equals $2.60 per AUM. This $2.60 for a horse AUM can be used in comparison with the $10.00 net benefit from a livestock AUM, as long as non quantifiable values are recognized. The 56 horses harvested in the EIS area last year can be estimated to have been worth about $18,000.

In addition to the economic value expressed above, the value of wild horses can be non-quantifiable in nature. These are as follows:

1. Viewing of the wild horses on the public lands - There is some monetary value to this, i.e. the cost of traveling to the wild horse areas, but this is minor. The basic value is the satisfaction derived by the individual viewing the horse. Current data and methodologies prevent placing an economic value on this satisfaction.

2. Existance value - This is the value that is derived by individuals from knowing that wild horses exist. They may have never seen and probably never will see a wild horse except in photographs. Again, no dollar amount can be placed on this type value given available data.

Demand Projections

The demand for wild horses can be expressed in two ways. First, the wild horses are in demand for adoption by private individuals. This demand is dwindling in the Reno area. The BLM is having to expend more money to ship the horses to the mid-western and eastern states, where the adoption demand still exists. There is also a demand for wild horses being on the rangelands. This was discussed above under viewing and existance values. This demand (numbers of wild horses) is quite variable as outlined in the following section.

Public Attitudes and Values

Of all the Bureau's programs, this in particular evokes the most disparate emotional reactions. The wild horse has a symbolic, as well as a sentimental value to most Americans. It represents the true old western tradition of freeedom and independence. It ranges wild, beautiful and free, where and when it will. It is a symbol dangling in front of a public bound by culturally constituted norms of behavior, constraints, rules and laws. The public rarely sees the damage resulting from over utilization of forage, or the effect on wildlife habitats and rangelands.

Ranchers and wildlife management specialists, of course, see the numbers of wild horses as a threat to the livestock industry and wildlife habitats. Many favor a management system where the numbers of horses are closely regulated. Very few groups actually favor total removal of the horses. Minimal control is favored by most of the protectionist groups.

This is also one of the most visible of the Bureau's programs due to television, radio and newspaper coverage. Due to the organizational activities of most protectionist groups, the majority of the urban public which rarely comes into actual contact with wild horses and burros tend to allign themselves with the protectionist groups.

The protectionists themselves vary in relation to management tactics. WHOA and ISPMB are proponents of habitat management and multiple use, where as AHPA believes that these animals should be left alone[1].

Ranchers feel that preservation of wild horses is not objectionable as long as grazing is not cut back in any way. Even many members of the public would react negatively if they thought that the existence of the wild horse or burro would adversely effect the livestock industry, especially regarding the store price of beef. Wild horse preserves are often mentioned as solutions to the controversy, as are sterilization programs, culling, removal and the Adopt-A-Horse program. This latter has received its share of criticism, pro and con, but the general public has only a lukewarm conception of the purpose, mechanisms and effects of this program.

As a corollary to the Sagebrush Rebellion proposition, the wild horse is thought by ranchers (and quite a few others) to be a part of Nevada, and not the Nation as a whole. As such,they believe it is up to Nevadans to dispose of their problem in the traditional manner - mustanging.

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[1] Public statements by Dawn Lappin, Helen Reilly and Mark McGuir, representatives, respectively.

Soils, Watershed and Air Quality

Many members of Nevada's livestock industry feel that the BLM's water-right acquisition threatens their existence and economy. Again, the Sagebrush Rebellion influences the opinion and it is often reiterated that the water rightfully belongs to Nevadans.

Conservationist groups such as the Sierra Club believe that the Federal Government should retain or file on (the process is misunderstood) as much water in the area as possible. The frequently mentioned purpose for this is to retain an adequate water supply for the wildlife.

All groups seem to agree that undue erosion is occuring on public lands. However, each particular subgroup places the cause for this on separate uses. For example, conservationists point to overgrazing as a reason for accelerated erosion; ranchers refer to the land management agencies handling of riparian areas; others point to poor fire control techniques.

Among those interviewed it is the standard consensus that the air quality has significantly deteriorated in the past few years. Urbanites frequently mention that the Reno-Carson Areas are becoming smog and (wood) smoke ridden more and more. Also the urban concentration's sewage problem has received much news coverage. These have been the topic of a number of city, county and state planning meetings.

A few say this is a natural consequence of progress and urbanization. Some feel that this nuisance can be controlled by the Federal Government. These people believe that the source of the pollution is the private industry. None offered a solution to this growing problem.

WILDLIFE

Analysis of wildlife in this document is limited to deer, chukar, bobcat, coyote, and game fish due to lack of data on other species. In the remainder of this analysis the term wildlife will represent only these species. This analysis is limited only to consumptive use of these species. It should be recognized that the value of non-consumptive use can be significant, but is not quantified here due to data limitations.

Mule Deer

Mule deer are the most popular big game in the area. Harvest is regulated by a tag quota system which varies from year to year with Nevada Department of Wildlife (NDOW) and California Department of Fish and Game (CDFG) goals. Since the full quota system was instituted in Nevada in 1976, there has been an increase in the "quality of the hunt" - this includes such factors as seeing fewer other hunters and/or having to compete with them for deer.

There are over 800,000 acres of deer habitat in the EIS Area, 550,000 of which are public land. These lands are contained in NDOW areas 2, 19, and 29 and CDFG Areas X8 and X5B. Public land habitat provides for about 11,000 deer (NDOW, 1980). In 1979 it was estimated that about 180 of these deer were harvested by 460 hunters who spent about 2,150 days hunting (Table 14). The EIS area provides about 2% of the deer hunting in Nevada.

Deer populations have been affected in the last several years by subdivision expansions, recreation activity, draught, deteriorated range conditions, severe winters and disease. Of particular importance is the restricted migration of the Lassen-Washoe and Carson interstate deer herds.

TABLE 14
1979 MULE DEER HARVEST
TOTAL HUNTERS FOR RENO ES AREA

	RENO	ES	AREA	PUBLIC	LAND	
MANAGEMENT AREA/COUNTY	DEER HARVEST	HUNTERS	DAYS	DEER HARVEST	HUNTERS	DAYS
2[1]	103	148	762	69	122	505
19[1]	241	582	2827	12	29	141
29[1]	70	151	685	47	101	459
ALPINE CO. CALIF.[2]	63	256	1280	25	102	512
LASSEN CO. CALIF.[2]	57	215	1076	29	108	538
TOTAL	534	1485	6024	182	462	2155

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[1] Mule Deer Investigations and Hunting Season Recommendations, 1980, Tsukamoto, NDOW.
[2] From CDFG.

Chukar

Chukar hunting occurs throughout the Reno EIS Area, with the heaviest hunting pressure in Washoe County. There are about 384,000 acres of chukar habitat in the EIS Area, 68% of which is public land. 20% of Washoe County lies within the EIS Area, and public land accounts for about 90% of the harvest[1] (7881 birds). Ninety-nine percent of Storey County, 76% of Carson City, 15% of Lyon County and 55% of Douglas County lies within the EIS Area; and public land accounted for 95% of the harvest[2], or 1131 birds.
No birds were harvested in Alpine County, and 132 birds[2,1] were harvested in Lassen County on public land within the EIS Area. Most of the hunting was done by Nevada residents.

Chukar populations are up sharply in the last year due to good chukar range conditions and water distribution particularly in Washoe County.

TABLE 15
CHUKAR HARVEST AND HUNTER DATA RENO ES AREA

	RENO EIS AREA[1]			PUBLIC LAND[2]		
ES AREA COUNTY OF KILL	TOTAL HARVEST	NO. OF HUNTERS	TOTAL HUNT-DAYS	TOTAL HARVEST	NO. OF HUNTERS	TOTAL HUNTER DAYS
Carson City	27	54	162	26	51	154
Douglas	170	105	224	162	100	213
Lyon	422	89	257	401	85	244
Storey	571	274	654	542	260	621
Washoe	8757	947	3852	7881	852	3467
Alpine Co. Calif.	0	3	9	0	1	3
Lassen Co. Calif.	269	43	129	132	21	63
Total	10216	1515	5287	9144	1370	4765

[1] "Upland Game...Hunting Season Recommendations", Molini, 1980, Based on percent of County land within the ES Area.
[2] Based on percent of harvest on public lands. Per comm. with Fred Smith and Terry Retterer, NDOW.

Income and Employment

Table 18 contains estimates of regional income and employment derived from public land wildlife in the EIS area. Of all activities, fishing was the most significant. Since fishing is heavily concentrated in the Indian Creek and East Carson areas these areas must be considered significant. In general, income and employment generated by wildlife occur in the retail trade sector (bait and tackle shops, gas stations, grocery stores,etc.) and are dispersed over a large number of establishments throughout the area. It is unlikely that any one store is very dependent on public land wildlife. In terms of contribution to overall regional income and employment, wildlife on public lands accounts for $115,000 in income and 9 jobs - less than 0.001% of total regional income and employment, respectively.

Also contained in the table are estimates of the capitalized value of wildlife resources in the EIS area. These estimates represent the present value of one user day or fur bearer harvested per year for 20 years and can be compared against the cost of providing for wildlife populations to determine relative merit of improvement projects.

Since deer habitat can be measured on a per AUM basis for comparison with allocations to livestock and wild horses, further analysis of the contribution of deer to the economy has been developed:

Direct Income per Deer AUM = $ .50
Regional Income per Deer AUM = $ 1.00
Annual Value per Deer AUM = $ 14.00
Capitalized Value per Deer AUM= $100.00
Source: Appendix C

Demand Projections

Wildlife harvest demand projections for 1990 are displayed in Table 19. They vary widely from species to species from a high of a 110% increase for deer, to a low of a 27% increase for fishing. Hunting and fishing projections are based on the anticipated human population growth in the Reno region of 46% and in California of 15% between 1980 and 1990. Deer projections were much higher than average since they include the number of deer tags applied for, but not received. Fishing projections were lower than average since it is estimated that about 60% of fishing use is from California which is expected to grow at a lower rate.

Fur bearer demands were based on linear regression projections of harvest trends over the last 10 years. It should be noted that harvest can fluctuate widely from year to year depending on pelt prices. The projections represent expected harvest by trappers. Other groups hold strong opposing views. Ranchers would prefer fewer coyotes and other groups are anti-trapping.

Fishing

Indian Creek Reservoir and the East Carson River are the two most popular fishing spots on public land in the Reno EIS Area. At Indian Creek rainbow trout are planted by California Fish and Game. In 1979, 11,300 fishing visits were made by Nevada and California residents.

The East Carson River has approximately 4 miles located on public land in California and Nevada within the EIS Area. No data on visits was available from California Fish and Game, but for Nevada, 5,476 visits were made on BLM administered land. The East Carson is stocked with rainbow trout, and sometimes cutthroat trout by California Fish and Game. The river is heavily fished by both Nevada and California residents.

Both Indian Creek Reservoir and the East Carson River are in good condition.

TABLE 16

FISHING DATA 1979

Location	Visits Attributable To BLM Administered Land	Visitor Days Attributable To BLM Administered Land
E. Carson River, Nv.	5,476	2,647
E. Carson River,Ca.		900
Indian Creek	11,300	5,461
Other	- -	413
Total	16,776	9,421

Fur Bearers

The bulk of the fur bearers harvest in the EIS area consists of bobcats and coyotes. They are harvested mainly by part time weekend trappers during the winter months. Quantities harvested are very sensitive to the price of pelts, which can fluctuate widely from year to year.

Population of coyotes appears to be stable at a high level. Bobcat harvesting has been increasing rapidly in recent years and NDOW indicates that harvests may be further controlled in order to maintain populations. Rodent and rabbit population levels have a significant impact on the populations of these fur bearers.

Table 17 indicates estimated total and public land harvest in the EIS area.

TABLE 17

Fur Bearer Harvest

	BOBCATS				COYOTES			
	REGION TOTAL		PUBLIC LANDS[2]		REGION TOTAL		PUBLIC LANDS[2]	
	# OF TRAPPERS	HARVEST	# OF TRAPPERS	HARVEST	# OF TRAPPERS	HARVEST	# OF TRAPPERS	HARVEST
WASHOE	54	247	8	37	77	2007	12	301
CARSON	4	20	2	11	5	34	3	19
DOUGLAS	11	52	5	21	10	60	4	25
LYON	20	89	2	10	37	465	4	52
STOREY	1	10	1	1	4	38	1	2
ALPINE[1]	141	47	5	2	282	893	11	33
LASSEN[1]	94	94	1	1	1457	2303	22	35
TOTAL	325	559	24	83	1972	5800	57	467

SOURCE: NDOW, 1980 AND CDFG, 1980

[1] California figures are based on hunting

[2] Public land percentage based on assumption that 75% of the harvest within the EIS area was from Public lands (Curran, 1980).

TABLE 18
RENO ES AREA
HUNTING AND FISHING GENERATED INCOME AND EMPLOYMENT

USE	USERS ON PUBLIC LAND	USE/UNIT	EXPENDITURES[2] DOLLARS/ UNIT	TOTAL PUBLIC LAND	REGIONAL INCOME[2] DOLLARS/ UNIT	TOTAL PUBLIC LAND	REGIONAL EMPLOYMENT DOLLARS/ UNIT	TOTAL PUBLIC LAND	CAPITALIZED VALUE[4] DOLLARS/ UNIT	TOTAL PUBLIC LAND
DEER HUNTING	462	2155/DAYS	$ 35 DAY[5]	$ 75,000	$ 7 DAY	$ 15,000	.5/1,000 DAY	1	$ 765 DAY	$1,649,000
CHUCKAR HUNTING	1941	4765/DAYS	$35 DAY[5]	$167,000	$ 7 DAY	$ 33,000	.5/1,000 DAY	2	$ 306 DAY	$1,458,000
FISHING	N/A	9421/DAYS	$20 DAY[6]	$188,000	$ 4 DAY	$ 38,000	.3/1,000 DAYS	3	$ 266 DAY	$2,506,000
BOBCAT HARVEST[1]	24	83 BOBCATS	$248 EACH[7]	$ 21,000	$ 270 EACH	$ 22,000	2/100	2	$1800 EACH	$ 143,000
COYOTE HARVEST[1]	57	467 COYOTE	$ 45 EACH[7]	$ 21,000	$ 40 EACH	$ 19,000	.3/100	1	$ 242 EACH	$ 93,000
TOTAL	N/A	N/A		$472,000		$127,000		9		$5,849,000
HUNTING AND FISHING	N/A	23,696		$430,000		$ 86,000		6		$5,613,000
FUR BEARERS	81	550		$ 42,000		$ 41,000		3		$ 236,000

[1] Fur Bearer figures are on a per annual harvest basis rather than per user day.
[2] Includes multiplier effect (appendix C)
[3] FTE Employment based on Income/Employment Ratio; (BEA, 1977, 1980)
[4] Present value of annual user day - value for 30 years (appendix C)
[5] Nevada Division of State Parks
[6] U S Fish and Wildlife Services 1975
[7] NDFG, 1980

TABLE 19

WILDLIFE DEMAND PROJECTIONS

	UNIT	1980 AMOUNT	1990 AMOUNT	% CHANGE
Deer	Hunters	462	1443	110
	Tags[1]	1102		
	Hunter Days	2155	4526	110
Chuckar	Hunter Days	3294	4809	46
Fishing	Fishing Days	9421	11965	27
Bobcat	# Harvested	83	111	34
Coyote	# Harvested	467	640	37

[1] Number of tags applied for minus percent not used (NDFG, 1980 and Schulenberg, 1980).

Public Attitudes and Values

The majority of the public does not view wildlife habitat as critical to the survival of the species. Their concern for wildlife hinges on deer tags and fishing licenses as well as success in harvesting these. Wildlife personnel interviewed felt that the only people who undertand that the Bureau manages habitat, and the Nevada Department of Wildlife manages the species, are those few involved employees in federal and state agencies. If this management dichotomy is explained to members of the public, they do agree that the Bureau's wildlife management program has a positive value.

Wildlife management specialists favor intense control of grazing to benefit wildlife habitat. The hunting and fishing public becomes involved when access to wildlife areas is blocked by grazing management projects such as fences. The general public does not see wildlife and livestock as mutually exclusive. Some members of conservationist groups are proponents for the total removal of livestock. Ranchers, as a rule, do not feel removal of wildlife from grazing areas is necessary; they express pleasure in seeing wildlife on the range. They would resist the reduction of livestock for the benefit of wildlife habitat, however.

Some employees of the NDOW feel that the BLM's forage allocations are insufficient for wildlife, and that the controls for livestock tresspass do not work[1]. They do feel the tresspass actions affect only the smaller ranches, not the larger operations and more frequent offenders.

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[1] Source: Personal interview with Dave Rice, Public Information Officer for NDOW and other NDOW personnel.

One major point of criticism concerns the management of riparian habitats. NDOW and others have stated that the BLM is not doing enough to safeguard these critical areas. The NDOW personnel have expressed a desire to become more involved with the Bureau's habitat management plans, but they feel that they do have a close liason now and all are working toward the same ultimate goals.

The conservationist groups are worried about the seeming imbalance of emphasis by both BLM and NDOW managers on game and nongame species. They say that due to the political and economic pressures involved with hunting and fishing, the nongame species and habitats are being ignored. There are organizations such as the Carson City Sportsmans Coalition which can lobby politically for their species interests. The nongame species are weakly represented by larger interest groups like the Sierra Club.

The mule deer is fast becoming a symbolic entity in the Reno-Carson area. The rural communities still view the deer as instrumental for hunting purposes.

The question has also been raised about the effects of MX placement in central and eastern Nevada on wildlife. Some feel that the loss of hunting and wildlife habitats in other parts of the state will increase hunting and fishing pressures in the Reno EIS area. Measures to deal with this have been mentioned (increased stocking rates, limiting out of state hunters) and concerns for managements forsight have been expressed.

RECREATION

RECREATION DEMAND IN THE RENO PLANNING AREA

GENERAL

The estimated population in the Reno Planning Area is 260,000. This large population lies within a short 2 hour driving time of the public lands within the Reno Planning Area. This has placed a significant demand on public lands for a variety of activities, as shown in PAA Table 20 Visitor Use Data, Reno Planning Area.

Most of the figures in Table 20 were derived from the Nevada State Parks System, Statewide Comprehensive Outdoor Recreation Plan (SCORP 1977).

Participation rates indicate the average frequency of participation per capita in an outdoor recreation activity during the most popular season.

Percent participation in SCORP Region I is an indication of what percent of the residents participate within their own region. As an example most residents in Region I go out of the Region to hunt big game (36.3% hunt in Region I). Other activities such as horseback riding (100%) occur near home. SCORP Region I includes Washoe, Carson, Storey, Lyon, Douglas and Churchill Counties. The majority of the population in Region I (approximately 95%) live within the BLM Reno Planning Area.

TABLE 20
VISITOR USE 1980

ACTIVITY	RESIDENT PARTICIPATION RATES	% PARTICIPATION IN SCORP REGION I	VISITOR DAYS RENO PLANNING AREA	VISITOR DAYS PUBLIC LAND RENO E. S. AREA
FISHING	4.53	58.6	216,000[6]	9,421[6]
BIG GAME HUNTING[1]	.07	36.3	3,900	1,600
SMALL GAME HUNTING	.38	60.0	37,500	15,800
DRIVING FOR PLEASURE	5.20	69.9	283,500	119,070
NATURE STUDY GEOL,BOT,S.S. SPECIFIC S.S.	2.84	82.5	101,500	42,630
PICNIC-RURAL	.38	71.6	9,325	3,900
CAMPING-TENT	.81	84.4	207,400	
AND VEHICLE	1.10	39.1	130,100	44,500
BACKPACKING	.05	72.2	10,900	2,200
RURAL DAY HIKING	1.57	88.8	108,700	38,000
HORSEBACK RIDING	1.07	100	83,500	35,070
HISTORIC S.S.	.92	70	27,900	2,800
OFF HIGHWAY VEHICLE[2]	1.27	70	107,600	45,200
VEGETATIVE COLLECTING[3]	.08	100	3,300	2,500
HANG GLIDING[4]			2,300	1,300
WHITEWATER BOATING[5]			3,900	1,000
SNOWPLAY	1.27	87.5	86,700	800

[1] Mule Deer Investigations and Hunting Season Accomendations,1980;NDW
[2] 1979 Motorcycle Statistical Annual, MIC
[3] Sales of Christmas Tree Permits
[4] Personal Communication Sierra Ski
[5] National Rivers Study, 1979, 1980
[6] NDW and CFW

All other information derived from the 1977 Statewide Comprehensive Outdoor Recreation Plan.

MAJOR ACTIVITIES (OVER 10,000 VISITOR DAYS ON PUBLIC LAND)

Driving For Pleasure - (scenic sightseeing) Residents responding to Nevada State Parks questionaires indicated driving for pleasure as the most popular recreation activity.

Off Road Vehicle Recreation - The second highest visitor day use on public lands is off-highway vehicle recreation. The majority of use is associated with other activites such as sightseeing and hunting.

Day Hiking - Short hikes to enjoy the out-of-doors is a popular activity in the Reno Area. The majority of this activity occurs in the Sierras to the west of the planning unit.

Camping - The 4th highest visitor use of public lands is camping. The majority of use on public land is occuring at Indian Creek Campground near Markleevile, California.

Nature Study - A large number of residents participated in this acitvity, indicating a sensitivity towards the natural and scenic qualities within their region. This activity includes viewing animals, plants and geologic formations.

Horseback Riding - A substantial amount of the horseback riding occurs on public lands. Mostly in the form of short day trips near populated areas.

MINOR PUBLIC LAND ACTIVITIES - (Popular regional activities with less than 10,000 Visitor Days on public land)

Fishing on public lands accounted for 9,421 visitor days. Most use occurs on the E. Fork of the Carson River (3,500 visitor days) and Indian Creek Reservoir (5,500 visitor days). Most Picnicing in the region occurs on other agency land. Historic sightseeing accounted for 2,800 visitor days. Big Game Hunting for mule deer is limited by license quotas. Most planning area residents will go out of the area to White Pine or Elko Counties to hunt big game. Backpacking had both low resident participation rates and visitation to public land. Areas of some interest are the Virginia Mountains and Pine Nut Mountains but use is low. Snowplay on public lands is insignificant.

SPECIAL ACTIVITIES

Most Hangliding in the Reno Planning Unit occurs on an area of lands north of Reno called Granite Hills. This site is exceptional for extended and high elevation flights. Very little Whitewater Boating (river resource) is available within one day travel time of residents in Planning Region I. The E. Fork Carson River offers the majority of whitewater boating in the planning region of which approximately 25% crosses public land.

Vegetative Collecting of pine nuts and Christmas trees is a popular activity in the Reno Planning Area. The annual visitor use statistics are misleading. The majority of use occurs in a very short 2-3 week period in relatively small acres of public land in the Pine Nut Mountain Range.

II. RECREATION SUPPLY - RENO PLANNING AREA

The following Table 21 shows the adequacy of supply for selected recreation activities in SCORP Planning Unit I which includes the Reno Planning Area. Significant deficiencies are shown in available Big Game Hunting, Stream Fishing, Picnicing, Camping and Passive Urban Park Space.

Information was not available for other activities.

III. INCOME AND EMPLOYMENT

The following PAA Table 22 indicates the economic significance of Recreation Activities in the Reno Planning Area. The largest public land contribution to the area's economy being the use of off road vehicles. In terms of total contributions to regional income and employment recreation on public lands it is not significant. It accounts for about $2.6 million in income and about 43 jobs or about 0.03% of total regional income and employment.

TABLE 21 RECREATION
SUPPLY SURPLUS AND DEVICIENCY SCORP REGION I[1]

ACTIVITY	1980	1990	COMMENTS
LAKE FISHING	+ 120,000 SURFACE ACRES	+ 113,400 SURFACE ACRES	PYRAMID, LAKE TAHOE, WASHOE, LAHONTAN ADEQUATELY HANDLE DEMAND OF RESIDENTS AND NON-RESIDENTS.
STREAM FISHING	-620 MILES	-950 MILES	THERE IS NOT ENOUGH RESOURCE AVAILABLE IN THE PLANNING AREA TO ACCOMMODATE DEMAND.
HUNTING	-637 TAGS	-978 TAGS	DECLINING SUCCESS RATIOS INDICATE A DECLINE IN MOST OF THE SUPPLY RELATIVE TO HUNTER DEMAND. THE DEMAND FOR BIG GAME LICENSES FAR EXCEEDS THE SUPPLY.
PICNICING	-440 FAMILY UNITS	-900 FAMILY UNITS	THE SUPPLY OF FACILITIES IN THE REGION HAS NOT KEPT UP WITH THE GROWING POPULATION AND DEMAND.
CAMPING	-6,130 FAMILY UNITS	-8,170 FAMILY UNITS	THE SUPPLY OF FACILITIES IN THE REGION HAS NOT KEPT UP WITH THE GROWING POPULATION AND DEMAND.
BACKPACKING	+ 190 TRAIL MILES	+ 190 TRAIL MILES	
HORSEBACK RIDING	+ 130 TRAIL MILES	+ 110 TRAIL MILES	
PASSIVE PARK SPACE NEAR URBAN AREAS	- 701 ACRES	- 982 ACRES	PASSIVE PARK SPACE IS DEFICIENT

[1] FROM 1977 SCORP - REGION I (WASHOE, CARSON, STOREY, DOUGLAS, LYON, CHURCHILL COUNTIES)

TABLE 22
RENO E. S. AREA
RECREATION GENERATED INCOME AND EMPLOYMENT

ACTIVITY	USER DAYS (VISITS) PUBLIC LAND	EXPENDITURES[1]		REGIONAL INCOME		REGIONAL EMPLOYMENT		CAPITALIZED VALUE	
		PER DAY	TOTAL PUBLIC LAND	PER DAY	TOTAL PUBLIC LAND	PER 1,000 VISITOR DAYS	TOTAL PUBLIC LAND	PER DAY	TOTAL
FISHING	9,421	$20	$188,000	4	$ 38,000	.3	3	$266	$ 2,506,000
HUNTING	5,449	$35	$190,715	7	38,000	.5	3	B.G.765 S.G.306	2,657,000
DRIVING FOR PLEASURE	396,900	NO RELIABLE WAY TO ESTIMATE VALUE OF PUBLIC LAND FOR THIS ACTIVITY							
NATURE STUDY	255,900	NO	DATA						
PICNICING	29,400	$ 9	$264,600	2	$ 58,800	.15	4	$ 97	$ 2,851,800
CAMPING	44,500	$12	$534,000	2	$ 89,000	.15	7	$137	$ 6,096,500
BACKPACKING	1,900	$12	$ 22,800	2	$ 3,800	.15	3	$137	$ 260,300
DAY HIKING	152,200	NO	DATA						
HORSEBACK RIDING	116,800	NO	DATA						
HISTORIC S.S.	16,700	NO	DATA						
ORV - GENERAL & COMPETATIVE	108,400	$13	$1,409,200	3	$325,200	.2	22		
COLLECTING	15,000	NO	DATA						
HANG GLIDING	3,800	NO	DATA						
WHITEWATER BOATING - COMMERCIAL	450	$40	$ 18,000	2	$,900	.15	1	$322	$ 145,000
WHITEWATER BOATING - PRIVATE	450	$ 9	$ 4,050	2	$,900	.15	1		
TOTAL[2]	$1,157,170	- -	$2,631,000	- -	$555,000	- - -	44	- - -	$14,516,000

[1] EXPENDITURE, INCOME, EMPLOYMENT, AND VALUE FROM APPENDIX C .

[2] INCLUDES ONLY QUANTIFIED DATA.

IV. DEMAND PROJECTIONS

Projections for future recreation activity are presented in Table 23. These figures are based on population growth anticipated in the Reno Planning Unit. The Reno Planning Unit has been identified as one of the fastest growing areas in the nation with an anticipated growth of 46% between 1980 and 1990.

For fishing and hunting projections refer to wildlife section.

TABLE 23

RECREATION DEMAND PROJECTIONS

	1980 Visitor Days		1990 Visitor Days 46% Increase	
ACTIVITY	TOTAL PLANNING AREA	PUBLIC LAND	TOTAL PLANNING AREA	PUBLIC LAND
Driving for Pleasure	283,500	119,070	413,900	173,800
Nature Study	101,500	42,630	148,200	62,200
Picnicing	9,325	3,900	13,600	5,700
Camping	337,500	44,500	492,800	64,970
Backpacking	10,900	2,200	15,900	3,212
Day Hiking	108,700	38,000	158,700	55,480
Horseback Riding	83,500	35,070	121,900	51,200
Historic S.S	27,900	2,800	40,700	4,100
ORV	107,575	45,200	157,059	66,000
Collecting	3,300	2,500	4,800	3,650
Hanggliding	2,300	1,300	3,400	1,900
W.W. Boating	3,900	1,000	5,700	1,500

Public Attitudes

Off road vehicles (ORV), hiking and general sightseeing are the major recr ational activities within the ES Area. The primary public concern relating to this resource is access. Regardless of the type of recreation activity involved, the public has expressed a desire to have unfettered access to their particular interest areas (Legislative Council Bureau, 1980).

ORV clubs and organizations are outspoken in their desire to prevent total closure of their favorite areas. They are not particularly opposed to preservation of certain areas for environmental reasons. Rather, they strongly protest undue development and growth because they feel this will constrain and probably curtail their interests. Many of the people involved in this type of leisure activity prefer unorganized and random "play" to large, organized events.

The Bureaus process of ORV designation is misunderstood. In conjunction with multiple use management, this process will, in fact, ensure maintenance of certain areas specifically for ORV activities, with few or minor restrictions. Critical environmental areas would be designated closed. This is magnified and overemphasized by the ORV enthusiasts; they fear an imbalance in the designations.

The ranchers frequently receive the blame for the access limitations. They in turn, are annoyed by the outright vandalism, littering and non-closure of gates which so often occurs. Ranchers favor restricting access to the general public in order to reduce costly damage. This is a rather volatile subject.

The East Fork of the Carson River is popular for rafting, fishing and other general uses. By FY81 the River Management Plan for this river will be completed. Use in the last few years has nearly tripled in geometric progression. The exact carrying capacicty of the river has not yet been determined. Commercial outfitters, now the only groups restricted to certain rules, are very much against limitations on numbers of groups allowed per season. Some argue for historic use as preference, others favor a more open free enterprise system. All agree that limitations will eventually have to be made in order to protect their outdoor experiences.

CULTURAL (ARCHAEOLOGICAL AND HISTORICAL) RESOURCES

Among a large segment of the general public, there is limited awareness of the existence of the Cultural Resources Program. Many of those who are acquainted with the program view it as a necessary part of environmental regulation compliance. People tend to identify with historic resources more closely than archaeological. 1/ Strong interest in the BLM's Cultural Resources Program is indicated by the frequent requests from local schools for presentations by the District Archaeologist. Approximately 200-300 students are given presentations each year.

Many adult residents of the Reno EIS area have attended the Carson City District's summer tours of archaeological projects in the Fallon area. A recurrent theme voiced by these people is that they are appreciative and supportive of the BLM's efforts in this area.

An attitude exists among some developers and other users of public lands that cultural resources clearances are time consuming and an impediment to progress. When confronted with an archaelogical site which might curtail a desired use, some feel that cultural resources is an "almost worthless" pursuit - a hobby with no advantage of productivity. 2/

Both urban and rural contingents feel that museums have a very positive value for recreation and education. Only a few are aware of the connection between the archaeologist and the interpretive display.

In summary, there is a three-way split in attitudes towards the BLM Cultural Resources Program in the Reno ES area:

1. Those who are basically unaware of the program and have no opinion.
2. Those who have been made aware of the program through the Carson City District's aggressive public contact program and are supportive of interpretive/protective measures.
3. Some public land users view the cultural resources program as an impediment to progress and some hobbyists view artifact collecting on public lands as a right and not an illegal activity.

1/ Source: Personal interviews with representatives of the professional archaeological community.

2/ Personal interviews with 4 archaeologists and 5 ranchers.

Recently, the Native Americans have appeared united on the protectionist side. As descendants of the original inhabitants, they claim the sites, the artifacts, and often the land. In some areas of the country, the American Indian Movement (AIM) is quite strong and militant. Legal restraints on artifact collecting and possession favor this new wave of thought in California. Here, all aboriginal sites and artifacts are recongnized possessions of the Native Americans. These people are lobbying in Nevada to have similar legislation passed. This movement is strongest in the Reno-Carson City area.

V. VISUAL RESOURCE MANAGEMENT

A. Visual Sensitivity

The criteria and procedure used for determining visual sensitivity is set forth in BLM 8411 manual. Basically, this involves a two-part inventory and evaluation process consisting of: 1) Determination of user volumn and 2) User attitude toward change in the landscape.

1. Use Volume

The importance of this factor is based on the premise that the greater the number of viewers in any given area the greater the "exposure" it receives and the greater its sensitivity is. Actual use volumes in the Reno Planning Area were calculated from traffic count data on highways and roads, population figures, and visitor use statistics for trails and rivers. Actual use volume was categorized into one of three levels according to the following criteria.

A substantial portion of public lands in the Reno Planning Area fall within a high or medium classification because of the large number of heavily traveled roads and population centers. Important travel routes and popluation centers (key observation points) and the foreground, middleground and background distance zones seen from these observation points are shown on the PAA Use Volume and Distance Zone planning overlays.

2. User Attitudes Towards Change

The procedure used was a modified version of the extensive (low level) procedure set forth in BLM manual 8411. It involved meeting with selected representatives of various agencies, private interests and public interest groups.

First each participant was asked to indicate a relative sensitivity or value they placed on the visual resource of each scenic quality rating area identified in URA - 3. Participants were asked to indicate the level of protection that should be given to each area: 1. Preservation; 2. High Protection; 3. Moderate Protection; 4. Low Protection, and 5. Rehabilitation.

"Preservation" would restrict all activities which would noticeably alter the landscape. "Rehabilitation" is an indication that the area is visually degraded and needs some level of corrective measures. These levels were intended to generally correspond to VRM management classes.

Then a list of potential actions that would result in visual change was presented. This list was supplemented with a series of photos showing the results of these activities. The list of actions included: 1. Range and Wildlife Improvements; 2. Woodcutting; 3. General off Highway Use; 4. Constructed Access Roads and Pipelines; 5. Vegetative Treatment (chaining, plowing, seeding); 6. Intensive off Highway Use; 7. Communication sites and Water Tanks; 8. Mining and Landfill; 9. Major Power Lines; and 10. Substations and Industrial Plants.

Each participant was asked to indicate how they feel the public sector or agency represented would respond to these different types of management activities in each scenic quality area.

H - Visual change by this activity would cause a strong negative reaction
M - Moderate negative reaction
L - Little or no negative reaction

After evaluating the ratings, consistency of answers, specific participant responses, amount of BLM land in the area, and specific issues or concerns, a final user attitude rating was assigned each area.

H - High concern for the visual resources
M - Moderate concern
L - Low concern

Following are the summaries for the planning area. The complete documentation of the study can be found in the Visual Resource Management Inventory File, Carson City District, BLM.

FINAL SUMMARY
PUBLIC CONCERN ABOUT VISUAL CHANGE
PYRAMID LONG VALLEY PLANNING UNIT

NUMBER OF PARTICIPANTS 8

1. Areas of High Concern
    - 008 - Incadecent Rocks
    - 011 - Red Rocks
    - 003, 005, 007 - Virginia Mountains
    - 015,016 - Peterson Mountain

2. Areas of Moderate Concern
    - 002 - Fort Sage Mountain
    - 012,, 013 - Long Valley
    - 019 - Pah Rah North
    - 021 - Seven Lakes
    - 022 - Peavine
    - 023 - Truckee River
    - 024 - Mt. Rose Foothills
    - 028 - Orleans Hills

3. Areas of Low Concern
    - 020 - Pah Rah South
    - 033 - Common Valleys
    - 034 - Common Hills and Mountains

FINAL SUMMARY
PUBLIC CONCERN ABOUT VISUAL CHANGE
PINENUT MARKLEEVILLE PLANNING UNIT

NUMBER OF PARTICIPANTS 10

1. Areas of High Concern
    046 - E. Carson River
    047 - Indian Creek
    049 - Mount Siegel
    050 - Upper E. Carson
    043 & 044 - Pinenut High Ridges (Lyon Peak)

2. Areas of Moderate Concern
    041 - Rawe Peak
    042 - Pinenut Slopes
    035,036,037 - Carson River
    039 - Jacks Valley
    045 - Mineral Valley
    048 - Markleeville
    051 - Bagley Valley
    052 - Barney Reilly

3. Areas of Low Concern
    025 - Chalk Hills
    033 - Common Valleys
    034 - Common Hills

In summary the public did indicate a concern for the visual resources in their region. This is backed up by the fact that the Statewide Comprehensive Outdoor Recreation Plan showed high participation rates in the region for nature study and driving for pleasure. The participation rates in the Reno Planning Area were higher than most other areas in Nevada.

Final Sensitivity Ratings

The Final Sensitivity Rating is the result of the combination of use volume and user attitudes according to the following matrix taken from the BLM Manual (8411.31 A4):

Concern	Use Volume	
H	H	HIGH SENSITIVITY
H	M	
H	H	
H		
L	H	MEDIUM SENSITIVITY
M	M	
M	L	
L	M	LOW SENSITIVITY
L	L	

The process used is a mechanical one in which the two preliminary PAA sensitivity overlays (use volume and user concern) are combined.

Wilderness

The wilderness inventories generated a great deal of public interest, especially in the Reno-Carson City Area. This may be due to the trend of urbanites, the more populous concentrations, to be more conservationist in basic philosophy than rural residents. Naturally, those who vocally disagree with the establishment of wilderness and wilderness study areas are those representative of the special interest groups whose use conflicts or would be curtailed by wilderness laws.

The mining industry, for example, feels that there are too many federal controls on mineral exploration. The establishment of wilderness areas, they say, will restrict them even further. These conflicts of uses,they predict, will only worsen the crisis situation for energy and minerals. Conservation groups have become quite involved during periods of public comment. Some concerned citizens are extremely worried about the future of Nevada's wilderness and scenic areas. Progress, urban growth, mineral explorations, poor livestock management decisions and practices are cited as contributing factors to the depredation of the natural landscape. Any chance for outstanding recreational or solitude values, they say, will soon be crushed under the wheel of progress. If this were to happen, only memories would remain, it would be better to preserve representative examples of wilderness and natural scenic areas for future generations.

PROBLEMS AND ISSUES SUMMARY

A. Competition for Range Vegetation
Preliminary indications are that in some areas vegetation is being overused and cannot support existing demand by wild horses, wildlife, and livestock, while maintaining adequate watershed protection. If this trend continues there will be long term decreases in the number of wild horses, wildlife, and livestock grazing on public lands as well as possibly irreversible damage to watersheds. This could have the following effects:

1. A gradual decline in ranching income as livestock numbers and/or weight gains on public lands are reduced. In the long run this could reduce ranch income and force ranchers to modify their operations.
2. A gradual decline in hunting-related income as wildlife populations decline. This would primarily impact the retail trade sector but it would be highly unlikely to force anyone out of business. Minimal decreases in adoption value would be caused by decreases in wild horse populations. Most of the impacts from declining watersheds would occur through loss of livestock and wildlife habitat. There would also be minor negative impacts from increased flood damage and sedimentation in irrigation systems. Minor decreases in tourist and recreation income could be caused by decreased water quality and destruction of springs.

There are a number of management actions which could be taken to reverse this trend. Some of these actions and their economic implications are:

1. Instituting intensive range management systems with fencing, water developments, vegetation manipulation, etc. In the long run this type of action could not only prevent the negative impacts outlined above but could also increase income in all of those industries. However, in those areas without high potential for improvement, it is unlikely that the monetary benefits would justify the costs of highly intensive management. This would be particularly difficult in the Reno Area because of high maintenance costs due to vandalism. The expenditures for range improvements could generate significant increases in government and construction related income and employment.

2. Reductions in wild horse numbers. This could reduce some of the negative impacts outlined in the first section. These reductions would have very little negative economic impact in the region. There could be some minor reductions in tourist related income.
3. Reductions in livestock numbers could also reduce some of the negative impacts outlined in the first section. This would reduce net economic benefits by about $10.00 per AUM. The change in net ranch income would be a concentrated economic impact in that it would accrue to the small number of ranchers with allotment reductions. It is possible that this short-term reduction of income would accelerate the current trend of conversion of agricultural lands to suburban sprawl type development. A major effect of reducing cattle numbers would be a decline in the market value of grazing allotments. Including the capital value of grazing fees to BLM plus labor income, they are worth about $75.00 per AUM.
4. Reducing the amount of spring grazing by livestock could also reduce some of the impacts in section one. This could severely impact ranches with high spring dependency on BLM. Generally, the only alternative source of feed during this period is hay. At the current price of almost $100.00 per ton, hay is the most expensive major source of feed. Additional economic losses could be caused by increased movement of cattle during the critical spring calving period (e.g. reduced calf crop, increased movement costs, etc.).
5. If wildlife populations are reduced as a result of BLM actions some of the negative impacts in section one could be reduced. Income derived from deer hunting expenditures would drop by $.50 per AUM. This would cause an overall regional income reduction of $1.00 per AUM due to the multiplier effect. This would be a low intensity, dispersed economic impact, in that it would be spread throughout the region. It is highly unlikely that anyone would be forced out of business. Based on very limited information, the market value of deer AUMs could be about $100.00. This is estimated to be within plus or minus $50.00 of the actual value.

B. Access to Public Lands

Development of private lands in the region has restricted access to public lands through them. At the same time population growth has increased the demand for access. The major economic implications of increasing access to public lands are:

1. The costs could be substantial. Easements across private lands vary widely in price and costs could be significant. Road construction costs also vary widely from about $600 per mile to as much as $25,000 per mile. The current budget is inadequate for maintenance of existing roads.
2. Increased access would lead to more vandalism. This would increase maintenance and repair costs to BLM as well as to ranchers and miners. Unauthorized use of public lands such as forestry trespass could increase. This would result in increased costs for use supervision. Recreation values in the short run could increase substantially. Ease of access should increase the number of user days by ORV enthusiasts, hunters and the general public.
4. Ease of access could substantially increase the value as well as volume of forest products harvested from the public lands. Savings to the public in the cost of power bills and Christmas trees could be significant.
5. In the long run, more intensive use could degrade the value of public lands for wildlife habitat, wild horses, livestock grazing, watershed, and recreation.

ORV and Access

The ORV organizations and enthusiasts are particularly outspoken concerning restricted access. The closure of certain areas or gate-locking severely curtails their recreational activities. This has led to bad tempers and hard feelings.

The State of Nevada recognized this problem. In June 1979, at the direction of Assembly Concurrent Resolution #39 of the 60th session, the Legislative Commission appointed a special committee to study access to public land over privately owned land, with particular emphasis for ORV, property damage and incentives to land owners. The recommendations made by this committee to the 61st Session of the Nevada Legislature include the following:

1) The State will identify and acquire key access corridors, 10 of which are slated for 1981.

2) In any future land sales, rights-of-way for public lands access will be reserved.

3) A resolution should be adopted in 1981 requesting increased cooperation from federal land managers. Their agencies should develop programs to assure adequate distribution from access points, marking and maintaining these routes.

4) Appropriate legislation for vandalism compensation should be developed.

The trend of these recommendations indicate the understanding that ORV activity is a serious problem that must be delt with at Federal and State levels. Conflict of uses and interests has produced a volatile situation.

C. Economic Diversification

The economy of the Reno region is dangerously dependent on a single industry - gaming. It is vital that the economic base of the region be expanded. Management actions which expand non-gaming related industries would help to alleviate this problem. In particular, expansion of ranching and mining on public lands could marginally widen the region's economic base. Other resource uses do not appear to have the potential to solve this problem. Recreation is a major industry, but since it responds to many of the same influences as gaming (fuel costs, disposable income, liesure time, etc.) its contribution to stabilizing the region's economy would not be as great as less related industries such as mining and ranching.

D. Urban/Suburban Expansion

The region's rapid population growth has generated increased demands for disposal of public lands to the private sector as well as for Recreation and Public Puposes (R&PP) leases. The major economic implications of disposals to the private sector are:

A. The supply of private lands in the region would increase. Since the majority of lands in the region are already in private ownership and are sufficient for expected population growth it is not anticipated that this would lower land prices, but it could have a minor effect in slowing price increases. This could marginally increase the region's growth rate.

B. The conversions of agricultural lands to subdivisions could be slowed in some areas since developers would have alternative lands available. It should be noted, however, that many of these agricultural lands are more suitable for development, particularly in terms of distance from existing development and slope.

C. Local government tax base would increase slightly. Any addition to the local tax base would provide badly needed funding for local services.

D. Disposal of small scattered tracts near urban areas would lead to more efficient BLM management by reducing demand for lands actions.

E. Returns from the sale of these lands would benefit Federal and State Treasuries. At present 95% of these returns go to the Federal Treasury and 5% to the State.

F. Since most public lands are not immediately adjacent to existing development their disposal could increase the region's urban sprawl. This type of development usually costs more in provision of community services than it returns in tax revenues. This is one of the primary reasons that local governments are generally against public land disposals.

G. Many of the small scattered tracts have very high value for R&PP leases. The option of instituting these leases would be lost if they were sold to the private sector. R&PP leases can significantly reduce the cost of providing public services when compared to the cost of private lands.

H. The expansion of subdivisions has already reduced wildlife habitat, public access, recreation values and livestock grazing as well as other "multiple" uses. The sale of public lands would accellerate this trend. The value of these uses would vary widely from tract to tract and could be significant in some areas.

If private lands are acquired the following could be expected:

A. Local tax base would be reduced.
B. Aquisition costs would vary by parcel but could be significant.
C. Public opposition could develop since only 13% of the state is currently in private ownership.

INFRASTRUCTURE AND BUREAU RELATIONSHIPS

INFRASTRUCTURE

A region's infrastructure is composed of its basic community facilities. It includes water, sewer, road and school systems, as well as police and fire departments. In the Reno Planning Area most of these community facilities have been severely strained in the past few years due to the rapid population growth. The following description of the effects of this growth on the infrastructure of Carson Valley is typical of the entire region.

"This rapid growth has severely strained the fabric of the Carson Valley. The provision of government services such as police and fire, and the construction of new roads and maintenance of old roads has lagged behind the growth that has occurred. Because of the tax revolt sweeping the country and Nevada, keeping up with the growth and trying to provide a minimum level of services and facilities is increasingly difficult. There is also a growing concern voiced by the residents of the valley that the quality of life in the area is being diminished by this rapid growth." (Carson Valley Master Plan, 1980)

TAX STRUCTURE

The region's ability to provide needed community services is dependent to a large degree on its tax structure since most public facilities are funded by local taxes. The tax structure in Nevada has been changing rapidly. A major property tax cutting initiative was passed overwhelmingly in 1978 but rejected in 1980. The State Legislature passed its own tax cutting measure after the 1978 election. This measure, S.B 204, cut the maximum allowable property tax rate from $5 per $100 assessed value to $3.64 per $100. It also mandated spending limitations. Local government spending is limited to the previous years population growth plus 80% of the increase in the Consumer Price Index. The long term effects on community facilities are not known yet. One problem likely to become significant in rapid growth areas is that the expenditure growth lags behind population growth by at least one year, since the population growth factor used to adjust the spending limit is based on the previous years growth.

Table 24 illustrates some of the major characteristics of local government finances. One of the measures of a communities financial health is its bond rating. Of the local entities that are rated, only the Lyon County School District is rated lower that "A". "A" rated bonds are upper-medium rated. The Lyon County Schools have bonded almost 90% of their debt limit - this undoubtedly contributed to their lower bond rating. Although Carson City bonds are rated "A", the City has reached 75% of its debt limit. Further debt financing without non-tax revenues or substantial increases in assessed value could become more difficult.

The tax rates vary significantly from county to county. Douglas County has the smallest tax rate at $.50 per $100 - much lower than any of the other counties. This is partially a function of the number of special districts. With 24, Douglas County has at least twice as many as any other county in the State. A recent analysis of these districts (Nevada Appeal, October 5,12,19, 1980) indicates that there are so many because the county was not able to keep up with the rapidly growing demand for public services. These districts provide roads, sewer, water, sanitation, fire prevention and other services. Not all special districts provide the same number or types of services. In areas where there are no special districts, such as Johnson Lane, the county provides services normally provided by the districts. These residents endure poorly maintained roads and have no sewer system. The proliferation of special districts often results in inefficient duplication of services. Some special districts (e.g., Ridgeview Estates) are in very marginal financial condition.

Another problem for local governments in the region is urban sprawl. Subdivisions are "leapfrogging" in all directions, skipping over vacant lands nearer the city centers. This type of development causes much higher costs for providing community services than a more compact form of development.

Two events in 1980 indicate that local governments have limited capacities to respond to changing conditions. Douglas County was forced to eliminate some badly needed road projects when the bombing of a major casino reduced gaming tax revenues. Carson City had to apply to the State for emergency funding to keep the school system operating.

The bottom line of these tax issues is the willingness of the public to pay for community services. The defeat of the 1980 property tax reduction initiative indicates that there is some concern about funding community services. However, Nevadans have not been willing to maintain the same tax effort as the citizens of other states. As Table 25 indicates, Nevada ranks first in terms of per capita capacity to raise tax revenues, but next to last in terms of per capita tax effort. Although it should be noted that Nevada has limited taxes in order to attract industry, (eg., the Free Port Law), the table does indicate that there are substantial untapped sources of tax revenue.

TABLE 24
FINANCIAL CHARACTERISTICS OF LOCAL GOVERNMENTS

	REVENUE BONDS $ MILLION	DEBT LIMIT $ MILLION	PERCENT BONDED	BOND RATING	ASSESSED VALUE $ MILLION	TAX RATE $ PER 100 ASSESSED	# OF SPECIAL DISTRICTS
WASHOE COUNTY	24	159	15	A1	1592	$1.66	12
SCHOOL DISTRICT	44	239	18	A1	1592	.60	
RENO	32	254	13	A1	848	.90	
SPARKS	7	79	9	A	264	1.10	
CARSON CITY	15	20	75	A	198	2.40	3
SCHOOL DISTRICT	18	30	60	A	198	.80	
DOUGLAS COUNTY	6	23	26	A	227	.50	24
SCHOOL DISTRICT	17	35	49	A	227	1.00	
LYON COUNTY	02	10	2	--	98	1.50	8
SCHOOL DISTRICT	13	15	87	B--1	98	.90	
STOREY COUNTY	3	1	30	--	14	2.60	0
SCHOOL DISTRICT	3	2	11	--	14	.50	
ALPINE COUNTY[1]	--	--	0	--	27	5.60	1
SCHOOL DISTRICT	6	2	30	--	29	.40	

SOURCE: LOCAL GOVERNMENT RED AND GREEN BOOKS, NEVADA STATE DEPARTMENT OF TAXATION, 1980.

[1] ALPINE COUNTY FIGURES ARE NOT COMPARABLE TO THE OTHER COUNTIES BECAUSE CALIFORNIA HAS DIFFERENT FINANCIAL REGULATIONS. TAX RATE AND ASSESSED VALUE HAVE BEEN CONVERTED TO NEVADA EQUIVALENTS, CINDE BREWER, ALPINE COUNTY TREASURER, 1980

TABLE 25

Rank		Tax Capacity Index
1	Nevada	151
2	Wyoming	147
3	Alaska	143
4	Delaware	122
5	District of Columbia	120
6	Illinois	114
7	Texas	113
8	New Jersey	111
9	California	110
10	Hawaii	109
11	Kansas	105
12	Colorado	104
13	Iowa	103
	Louisiana	103
	Nebraska	103
14	Maryland	102
	New York	102
	Ohio	102
	Oklahoma	102
15	Michigan	101
16	Washington	100
17	North Dakota	99
18	Florida	98
	Indiana	98
	Minnesota	98
	Montana	98
	Oregon	98
19	New Hampshire	97
20	Connecticut	95
21	Massachusetts	94
	Missouri	94
	Pennsylvania	94
22	Arizona	93
	New Mexico	93
	Virginia	93
	Wisconsin	93
23	South Dakota	91
24	Kentucky	90
	West Virginia	90
25	Georgia	88
26	Idaho	87
27	Rhode Island	86
	Utah	86
28	Vermont	84
	North Carolina	84
29	Tennessee	82
30	Alabama	78
	Arkansas	78
31	South Carolina	77
32	Maine	74
33	Mississippi	70

Rank		Tax Effort Index
1	New York	152
2	Massachusetts	131
3	Vermont	121
4	California	120
	Hawaii	120
	Wisconsin	120
5	Maine	118
6	Minnesota	115
	Rhode Island	115
7	Connecticut	113
8	Arizona	109
9	Michigan	105
10	Maryland	104
11	Washington	101
12	New Jersey	99
	Oregon	99
13	Illinois	97
	Mississippi	97
14	Montana	96
	Pennsylvania	96
15	Iowa	95
16	North Dakota	94
17	Idaho	93
18	Colorado	92
	Indiana	92
19	Utah	91
20	District of Columbia	90
	South Dakota	90
21	New Mexico	88
	North Carolina	88
	Virginia	88
22	Georgia	87
	Kansas	87
	South Carolina	87
23	Delaware	86
	Nebraska	86
24	Missouri	85
	West Virginia	85
25	Alaska	84
26	Louisiana	82
27	Kentucky	81
	Tennessee	81
28	New Hampshire	80
	Ohio	80
29	Alabama	79
	Arkansas	79
	Florida	79
30	Wyoming	73
31	Oklahoma	71
32	Nevada	70
33	Texas	68

NOTE: This table is derived from Table 1 in D. Kent Halstead, *Tax Wealth In Fifty States*, National Institute, U.S. Department of Health, Education, and Welfare (U.S. Government Printing Office, Washington, D.C., 1978), pp. 12, 13.

Source: Stienman and Ganzel, 1980

BLM'S CONTRIBUTION

Public lands contribute to local and state government revénue. In lieu taxes for each county are presented in Table 26.

TABLE 26

IN LIEU OF TAXES PAYMENTS
FY1979

COUNTY	PAYMENT	PERCENT OF TOTAL PROPERTY TAX
WASHOE	$1,103,000	2
CARSON CITY	67,000	1
DOUGLAS	169,000	2
LYON	350,000	10
STOREY	11,000	2
ALPINE	36,000	5
TOTAL	$1,736,000	2

It should be noted that not all of these payments are attributable to public lands on the EIS area.

The state recieves 50% of all mineral lease receipts and 5% of all sales of lands and materials by BLM. These receipts become part of the school distributive fund which is allocated to the counties on a per pupil basis.

Public lands also contribute towards payments to the state for school impact aid for children of persons dependent on public lands, including ranchers and BLM employees. The State Highway Department receives additional funds based on a formula which includes the percentage of public lands in the state. Together, these accounted for about $17 million during 1979 on a statewide basis. No breakdown on the EIS area's contribution is available.

WATER AND SEWER CAPACITY

In the Reno region, the most important component of infrastructure is the water supply system. It will ultimately determine the level of population. Water and sewage issues have been ranked as the major problems in the region. Water supplies are limited in each of the region's counties. Storey County is probably in the worst position. Water supplies for Virginia City must be pumped in from the Sierras. Its share is almost completely allocated. As a result building permits have been severely restricted. At the other end of the spectrum, Alpine County appears to have sufficient water supplies. Although surface water rights have been totally appropriated, groundwater use is minimal. A significant amount of agricultural water is being obtained from South Tahoe Public Utility District.

The two main water sources in the region - the Truckee and Carson Rivers - have been the subject of continuing legal battles over water rights since the early 1900's. Sierra Pacific supplies most of the water for Reno/Sparks from the Trukee River. The company uses about 50,000 acre feet. It is currently restricting water hookups pending the aquisition of additional water rights from agricultural users. Sierra Pacific estimates that about 28,000 acre feet of unused agricultural rights are available. Another 45,000 acre feet are being used for agricultural purposes. The company expects that much of this agricultural land may be converted to other uses in the future and that additional water rights would become available for municipal uses. (Firth, 1980) It should be noted, however, that due to over-appropriation of Truckee River water, Pyramid Lake is shrinking.

Douglas County is in a similar situation. Surface water supplies are completely allocated and groundwater withdrawal equals recharge. Unless conservation measures are effective, population growth will be dependent upon the continued conversion of agricultural water rights.

Carson City is in the planning stage of a large water supply expansion. Much of the additional water would come from the improvement and expansion of reservoirs in the Sierras. An additional proposed source is the purchase of agricultural water rights from Douglas County.

Lyon County also faces water shortages. The Stagecoach area east of Dayton is experiencing rapid depletion of groundwater. The other rapidly growing areas around Fernley and Dayton could run into the same problem in the future.

Water use levels also depend on the capacity of sewage treatment plants. The largest treatment plant in the area serves Reno/Sparks. It is currently operating at its capacity of 20 million gallons per day (mgd). Expansion of the plant has been accelerated in response to recent growth. Plans are for the completion of this "Early Start" project by April, 1981. This will increase the capacity to 30 mgd which should be sufficient to handle projected growth until 1985. By that time the full expansion to 40 mgd should be completed. This should be enough to handle population growth until the year 2000.

The Carson City plant is also operating near capacity and does not meet water quality standards. Plans are currently being developed to expand its capacity to meet the year 2000 population projection of 70,000. Water and sewer connection fees could rise by as much as $10,000 if these projects are approved. The agencies responsible for sewage treatment in Douglas and Storey Counties are also in the planning process for expanding and upgrading their treatment plants. In Lyon County, Dayton has recently completed a major expansion of its treatment plant. In Alpine County, the Markleeville treatment plant has substantial excess capacity.

Many areas throughout the region rely on individual septic tanks. As the regions population becomes more crowded and groundwater quality becomes a more important issue, it is likely that septic tank use will become more restricted.

SCHOOLS

School systems throughout the region are being strained by an influx of new students. The Washoe County School District has an enrollment of about 32,000 - above the capacity of 30,000 (1980).

The District currently has eight new shcools under construction. They will add to the total capacity by about 5,000 students. This should be sufficient for the next few years, but more schools will have to be built before 1990.

Carson City has a junior high school under construction. This should be capable of handling short term needs. Operating revenue is a continuing problem in the Carson City School District. The district had to apply to the State for emergency funding in 1980.

The Douglas County School System has enough overall capacity to handle current student populations. It is building a new elementary school at Indian Hills to reduce bussing.

Lyon County voters recently approved a $10 million bond for construction of schools in Dayton and Fernley. The need for a new school at Dayton is immediate as Carson City no longer accepts Dayton students.

Storey County has sufficient capacity in its school system, but new facilities may be required in outlying areas.

Alpine County sends its high school students to Douglas County. Population levels do not justify construction of one in Alpine County in the near future. The elementary school at Diamond Valley has enough capacity for forseeable growth in the near future.

MEDICAL CARE

Major medical care facilities are available only in Carson City and Reno/Sparks. There is a small health center in Yerington but many Fernley and Dayton area residents use the hospitals in Reno and Carson City. The national guideline for efficient hospital operation is an average occupancy of 80%. Of the three major hospitals in the area only the Carson Tahoe has achieved this level. It's rate is about 85%. The Reno hospitals have been operating at a lower rate. Washoe has a 69% occupancy rate. St. Mary's has a 77% rate. Current facilities should be adequate through 1984. Projections show a 40 bed excess at that time in the urban area (Greater Nevada Health Systems Agency, 1980).

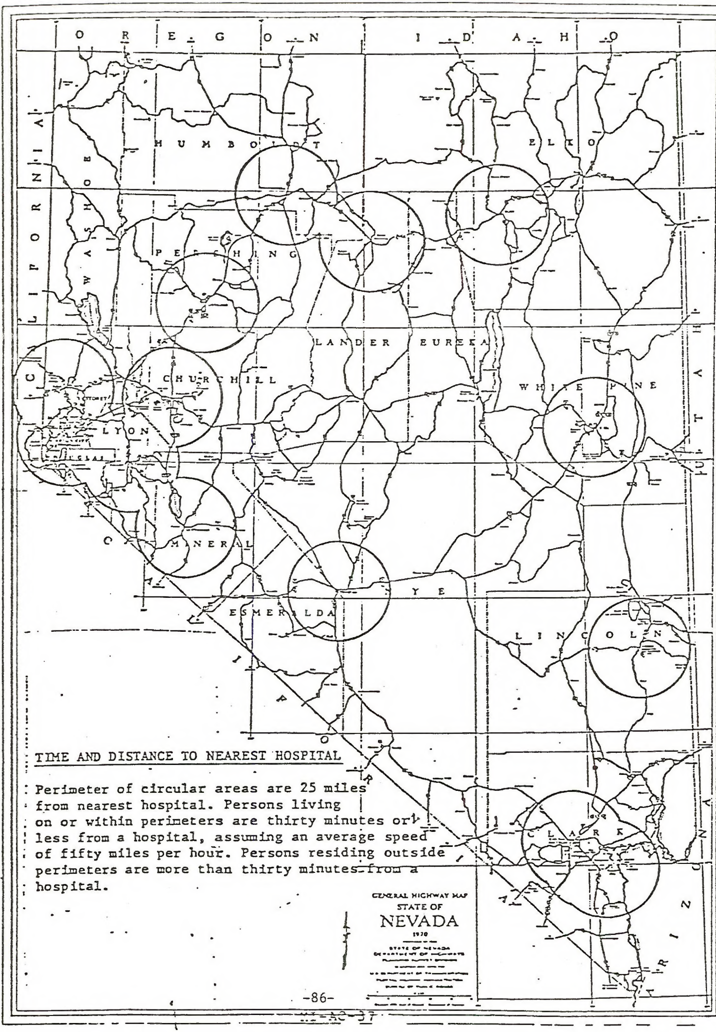
Major health care problems identified in Washoe County are health manpower shortages in the outlying areas of Stead/Lemmon Valley, and Sun Valley, Wadsworth, and Gerlach. Other major issues include alcoholism, child abuse, and primary care availability. In the other Nevada Counties, manpower shortages were identified in Douglas, Lyon, and Storey. Carson City and Douglas County identified needs for outpatient facilities and detox units to handle a growing drug and alcohol abuse problem. Alpine County must rely on Carson City for major medical care. As figure 6 illustrates the majority of the region is within acceptable distance of hospitals. Alpine county is the only exception.

POLICE PROTECTION

A recent survey showed that area residents felt that of a list of local government services, police protection ranked first as far as needing additional funding. Staffing appears adequate in most counties although the Carson City office indicated manpower shortages.

Jail facilites are in critically short supply in the region. Washoe County had to throw together a modular jail when voters turned down a major jail bond issue. The communities of Carson City, Dayton, and Virginia City indicate a need for expanded facilities. In Douglas County, a new jail is in the construction process in Minden.

Figure 6



TIME AND DISTANCE TO NEAREST HOSPITAL

Perimeter of circular areas are 25 miles from nearest hospital. Persons living on or within perimeters are thirty minutes or less from a hospital, assuming an average speed of fifty miles per hour. Persons residing outside perimeters are more than thirty minutes from a hospital.

Local Sheriff's offices indicate that very little police activity occurs on public lands. Only Brunswick Canyon in Carson City and Indian Creek Reservoir in Alpine Conty were mentioned as needing occasional patrols.

ROAD SYSTEMS

Road systems in the area are being severely strained, particularly in the major urban areas. Existing roads are over capacity and not maintained properly. The Futures Commission survey found that area residents ranked roads/transportation/traffic third only to water/sewer and growth as the most important problems facing their area. Funding for local road departments is primarily from a per gallon tax on gasoline. In recent years this source of funding has not kept pace with increases in traffic due to the use of more fuel efficient vehicles. This will make it increasingly difficult to maintain existing roads let alone build new ones.

SEARCH AND RESCUE

Search and rescue services are among the few public services that are not severely strained by the population growth in the area. Initial response to calls for search and rescure is by County Sheriffs Departments. They make the decision to call in volunteer organizations. Washoe County has about 120 volunteers on call with services ranging from horse posses, aero squads, and jeep squads to mountain and mine rescue units. Their capabilities far exceed the demands for their services. The county has to rotate calls between the various organizations to keep them busy. The other area counties also have sufficient capabilities to handle any forseeable emergencies. Very few calls for search and rescue services on public lands occur. There are occasional calls for lost children from the Indian Creek Campground and lost persons along the Carson River or in the Pine Nut Mountains. A potential problem could be open mine shafts, particularly near Virginia City.

FIRE PROTECTION

Local fire departments are generally able to handle current needs but most expect that future population growth will require expansion. Washoe County indicated that additional facilities could be required in the Spanish Springs area if growth continues. The Carson City Fire Department could use another station near the community college. Lyon County departments are in need of funding for improved equipment. Douglas County would prefer more professional rather than volunteer firefighters. Fire protection is a major concern in Alpine County. Some concern has been expressed about BLM capabilities in the Indian Creek area.

BLM provides substantial assistance to other firefighting agencies in the area. The following tables detail the District facilities and equipment.

TABLE 27
FIRE FACILITIES

1.	Fire Control Office	Carson City, Nevada
2.	Fire Control Station	Topaz, California
3.	Fire Control Station	Doyle, California
4.	Fire Control Station	Markleeville, California - owned by US Forest Service
5.	Fire Control Station	Sparks, Nevada - owned by Truckee Meadows Fire Protection District
6.	Dispatch Office	Washoe Valley, Nevada - Interagency dispatch center with US Forest Service and Nevada division of Forestry
7.	Carson Valley Air Center	Interagency Air Tanker Base with US Forest Service and Nevada Division of Forestry
8.	Heliport	Carson City, Nevada - in cooperation with Carson city Fire Department

TABLE 28
FIRE SUPPORT AND EQUIPMENT

	Item	No.	Remarks
1.	Ground Pumper, Heavy	6	500 gal w/ LC capability
2.	Ground Pumper, Light	4	200 gal w/ LC capability
3.	Ground Pumper, Special	1	Unimog 350 gal w/water expansion system
4.	Ground Pumper, Special	1	600 gal w/water expansion system
5.	Ground Pumper, Special	1	Twister Dragon Wagon w/LC and backfiring capability
6.	Mother Tanker	1	2500 gallon capacity
7.	Helicopter, Medium	1	Rental contract during

BUREAU RELATIONSHIPS

A list of Cooperative Agreements and Memoranda of Understanding which affect Carson City district programs is enclosed with Instruction Memo NV-80-373. Further information is in the District Cooperative Agreement files.

There are numerous other agencies responsible for land use planning in the region. Most of these agencies have had trouble keeping their land use plans up to date because the rapid population growth in the region has resulted in rapid changes in land use patterns. Some of these agencies update their long range plans every few years, others have allowed their plans to become obsolescent.

Descriptions of each of the organizations in Nevada are on the following pages.

In California, there are two planning agencies responsible for Alpine county. The Alpine County Planning Commission has a general plan which dates back to 1964. Portions were updated in 1969 and 1974. A recent analysis indicates that most sections are neither current nor consistent (Alpine County, 1980). However, the County is currently in the process of preparing a comprehensive growth management plan for its eastern slope.

Alpine County is assisted by the Central Sierra Planning Council. This council serves in an advisory capacity to the counties of Alpine, Calaveras, Amador and Toulomne. It coordinates land use planning on an areawide basis, provides technical planning assistance, and prepares grant applications for the counties.

The Lassen County Planning Department is currently in the process of developing a detailed land use plan for the Hallelujah Junction area which includes most of the EIS area lands in that county.

(4) CARSON CITY REGIONAL PLANNING COMMISSION

Planning Area: Carson City

Address: 2621 Northgate Lane, Suite 54
Carson City, Nevada 89701

Phone No.: 882-7883

Chairman: Bill Rogers

Vice Chairman: Joe Edwards

Other Members: June Peterson
Al Escalante
William Shewan
Al Wilson
Jacquie Grose

Year Established: 1962

1960 Census: 8,063

1970 Census: 15,468

1980 Estimate: 36,000

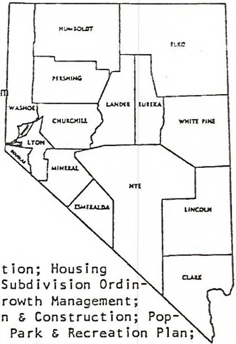
Area: 146.9 sq. miles

Commission Meets: Last Tuesday of each month, 7:00pm
Justice Court Meeting Room

Planning Contact: John Hoole, Planning Director

Total no. of staff - 10

Planning Budget 1979-80: $ 160,000



Programs and Projects

Completed: General Plan (1975); Downtown Revitalization; Housing Plan; Zoning Ordinance; Sign Ordinance; Subdivision Ordinance; Policy Plan; Information System; Growth Management; Bikeway Plans & Construction; Park Design & Construction; Population Plan; Short Range Transit Study; Park & Recreation Plan; Land Use Plan; Overall Economic Development Program.

In Process: Grants Management Plan; Fire Protection Management Plan; Subsidized Housing Study-Phase I & II; Cultural Resources Study; Public Facilities Plan; Air Quality Plan.

Planned: Capital Improvement Program; Downtown Revitalization Construction-Phase II; Solid Waste Management Plan; Flood Insurance Management Plan; Overall Economic Development Program-Phase II; Master Plan Update-Includes All Elements; Short Range Transit Study-Phase II; Civil Defense Master Plan.

(5) CARSON RIVER BASIN COUNCIL OF GOVERNMENTS (CRBCOG)

Year Established: 1971

1960 Census: 26,707

1970 Census: 41,779

1980 Estimate: 85,000

Area: 8046 square miles

Planning Area: Carson City & Counties of Churchill, Storey, Lyon & Douglas exclusive of the Lake Tahoe Basin

Address:
P. O. Box 1927
Carson City, Nevada 89701

Phone No.: 885-4680

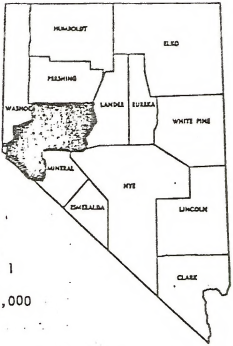
Chairman: Jack Warnecke

Vice-Chairman: John Poli

Other Members:
Bill Lee

Herb Witt

Robert Berry



Council Meets: 2nd Tuesday of each month, 1:30 P.M. Meeting place rotates among counties.

Planning Contact: Robert Sullivan, Executive Secretary

Total No. of planning staff - 2
No. of professional planning staff - 1

Planning Budget 1979-80 (Including Federal Funds): $55,000

Programs and Projects

Completed: Housing and Land Use Elements (1978), Carson River 208 Plan (1978), Legislative Program (1979), Adoption-Certification of Water Quality Policies (1979).

In Process: A-95 (Continuous), Truckee River Corridor-Perspective on possibilities for coordinated inter-county activity, Inter-county Workshops-policy and procedure coordination, uniformity; mutual aid.

Planned: Planning & General County Legistation, Comparison of growth management procedures in the region.

(12) DOUGLAS COUNTY PLANNING COMMISSION

Planning Area: Douglas County

Address: P. O. Box 218
Minden, Nevada 89423

Phone No.: 782-5176, Ext. 296
883-1648

Chairman: Dallas Byington

Vice-Chairman:

Other Members: Mike Ryan
Larry Pedret
James Miller
Bryce Wilson
Norman Page
Harriett Kerr

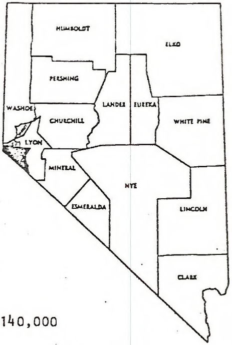
Year Established: 1953

1960 Census: 3,481

1970 Census: 6,882

1980 Estimate: 22,000

Area: 724 sq. miles



Commission Meets: Last Thursday of each month,
9:00 A.M., County Library

Planning Contact: Andrew Burnham, Planning Director

Planning Budget 1979-80 (Including Federal Funds): $140,000

Programs and Projects Growth Management Program

*Completed:** Zoning Ordinance (1955-1968), Subdivision Ordinance (1967), General Plan (1967, 1975), Recreation Plan (1969), Subarea Plans for Indian Hill, Gardnerville Ranchos, and Topaz Vicinity, Growth Management System, General Plan Update Zoning Ordinance Revision, Subarea Update.

In Process: Development Controls, Rezoning of Carson Valley

Planned: Review and update General Plan, Zoning Ordinance, Mobile Home Ordinance.
Develop Managed Growth Methodology.
Develop Data Collection and Retrieval System.
Review and develop Subarea Plans.

* Completed Carson Valley General Plan (1980)

(26) LYON COUNTY PLANNING COMMISSION

Year Established: 1971

1960 Census: 4,379

1970 Census: 6,211

1980 Estimate: 16,800

Area: 2,024 sq. miles

Planning Area: Lyon County
(Unincorporated Area)

Address: Courthouse
Yerington, Nevada 89447

Phone No.: 463-3341 Ext. 223

Chairman: Bobbie Miller

Vice Chairman: Melvin Pursel

Other Members: Carol Bonds

Claude Williams

Georgia Fulstone

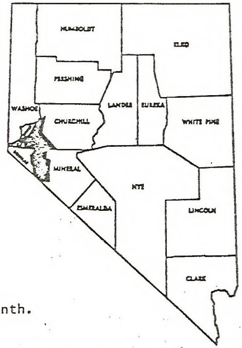
Neil Mortensen

Nelson Sciarani

Ex-Officio Members: Roy Hibdon, Acting County Engineer

John McNown, County Commissioner

John Poli, County Commissioner



Commission Meets: 9:30 A.M., 2nd Tuesday of each month.
Lyon County Courthouse

Planning Contact: Stan Spezzi, Public Works Director & Planning Director
Janice Lee, Secretary

Total no. of planning staff - 2

Planning Budget 1979-80 (Including Federal Funds) $ 25,000

Programs and Projects

Completed: Zoning Ordinance (1973), Subdivision Ordinance (1973), Housing Authority (1969), Master Plan (1973), Dayton Water System (1975), Fernley Sewer Intercepter, County Public Safety Building-Yerington, County Library, Mark Twain Fire Station, Remodeling of Silver Springs Community Center, Yerington Social Services Building (1979), Dayton Sewer System-Expanding (1980).

In Process: Fernley Water Facilities & Sanitation Facilities

Planned: County Complex (Fernley), Senior Citizen Center (Fernley), Records Retention Center (Yerington), County Maintenance Building (Yerington)

(31) CITY OF RENO (REGIONAL PLANNING COMMISSION OF RENO, SPARKS AND WASHOE COUNTY (36) PERFORMS SOME OF PLANNING FUNCTION)*

Year Established: 1903

1960 Census: 51,470

1970 Census: 72,863

1980 Estimate: 118,000

Area: 36.6 sq. miles

Planning Area: N/A

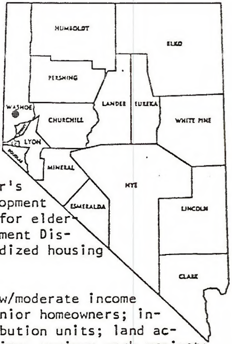
Address: P. O. Box 1900
Reno, Nevada 89505

Phone No.: 785-2040

Planning Contact: Susan Powers, Community Development Director

Planning Budget1979-80 (Including Federal Funds) $2,176,000

Programs and Projects (See also #35)



Completed: Coordinated Elderly Services, rehabilitation of California building, acquisition of Orvis Ring property and demolition of existing structure, housing rehabilitation, construction of Elderport Transportation Services building adjoining Senior Citizen Center, Governor's Bowl Park Project, weatherization, development of Pat Baker Park, electrical extension for elderly 202 project, formation of a Tax Increment District, paint project for federally subsidized housing project.

* Reno just established a 15 member Planning Agency. This agency will perform many of the functions formerly performed by the Regional Planning Commission.

In Process: Housing rehabilitation for senior and low/moderate income families; weatherization services for senior homeowners; installation of Thermocycler heat redistribution units; land acquisition for low-cost housing construction; various park projects (Mayor's Park, Ecbo Loder, Duncan-Traner, and Stewart Park, transportation of senior citizens and the handicapped through Elderport Services Inc.; day care services on a sliding scale for low/moderate income families; renovation of structure for serving the mentally and physically handicapped; housing counseling, information and referral; paint project for federally subsidized housing project; and neighborhood planning, including citizen participation in the Block Grant Program; downtown redevelopment with Tax Increment District funds; emergency housing shelter for persons coming to the area with a job but no home; Dick Taylor Park Shelter and Playground for the Handicapped; construction of a youth services center; land acquisition for facility expansion to serve the mentally and physically handicapped; master planning for downtown community cultural facilities; rehabilitation of a facility for substance abusers; contract with R. L. Polk for statistical data re: the Reno SMSA; and after school program in three Reno elementary schools.

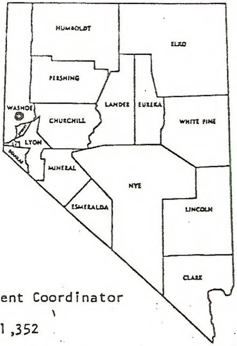
Planned: Construction of a neighborhood center for the Hispanic Community; rehabilitation and expansion of a day care facility to serve low/moderate income families; construction of a fire station to serve the Raleigh Heights area; emergency housing and counseling for victims of domestic violence; and senior citizen exercise program.

(32) CITY OF SPARKS (REGIONAL PLANNING COMMISSION OF RENO, SPARKS, AND WASHOE COUNTY (36) PERFORMS SOME OF PLANNING FUNCTIONS)*

Planning Area:	N/A
Address:	431 Prater Way Sparks, Nevada 89431
Phone No.:	359-2700

Year Established:	1905
1960 Census:	16,618
1970 Census:	24,187
1980 Estimate:	48,000
Area:	12,050 sq. miles

* Sparks has withdrawn from the Regional Planning Commission and now performs it's own planning functions.



Planning Contact: Alex Fittinghoff, Community Development Coordinator

Planning Budget 1979-80 (Including Federal Funds): $121,352

Programs and Projects (See also #35)

*Completed:** Town Center Study, Zoning Ordinance, Truckee River Green Belt Study, Sign Ordinance, Redevelopment Project, Urban Design Plan, Growth Management Program, Truckee River Greenbelt Development Program, Parking District.

In Progress: Downtown Redevelopment Program, Gateway Program, Bikeways Program, CDBG, HCRS Grants, Neighborhood Planning Program, Zoning Enforcement Program, Neighborhood Improvement Program, Seek funding for Downtown Redevelopment Gateways, Bikeways, Landscape Policy, Capital Improvement Program.

Planned:

*Completed Sparks Master Plan (1980)

(33) STOREY COUNTY PLANNING COMMISSION

Planning Area: Storey County

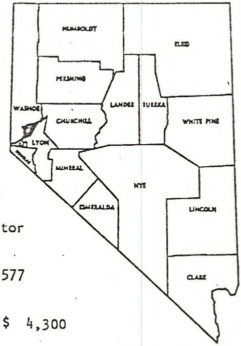
Address: Courthouse
Virginia City, Nevada 89440

Phone No.: 847-0622

Chairman: Mike Parsons

Co-Chairman: Wallace Corey
Other Members: Gordon Churchward
JoAnn McLachlan
Al Lamberti
Duane McNeilley
Mike Parsons

Year Established: 1963
1960 Census 568
1970 Census: 695
1980 Estimate: 1,600
Area: 262 sq. miles



Commission Meets: 2nd & 4th Wednesdays, 7:30 p.m.,
County Court House, Virginia City

Planning Contact: Wallace C. Corey, Building Inspector
P.O. Box 348, Virginia City

Barbara Herron, Secretary 847-0577
Total no. of planning staff - 0

Planning Budget 1979-80 (Including Federal Funds) $ 4,300

Programs and Projects

Completed: Subdivision Ordinance, Zoning Ordinance, Access Ordinance, County Land Use Plan, Industrial Survey

In Process: Revised Sign Ordinance, Mobile Home Park, Mobile Home Subdivision Ordinance, Recreational Vehicle Park Ordinance, Revised Land Use Regulations, Revised Zoning - County & River District, Individual Mobile Homes Ordinance, River District -Zoning Book of Maps, Virginia City-Gold Hill Street Book of Maps, Virginia City-Gold Hill Zoning Book of Maps.

Planned: Historic Preservation Plan
Wildlife Refuge Plan

(34) TAHOE REGIONAL PLANNING AGENCY (TRPA) GOVERNING BOARD *

Planning Area: Portions of Counties of Washoe, Douglas, Placer and El Dorado and Carson City, located within the Lake Tahoe Basin, and City of South Lake Tahoe.

Address:
2155 South Avenue
P. O. Box 8896
South Lake Tahoe, California 95731

Phone No.: (916) 541-0246

Chairman: Roland Westergard

Vice-Chairman: Norman Woods

Other Members:
Jim Henry
Clayton Phillips
position vacant
Ken Kjer
Thomas Stewart
Bennie Ferrari
Huey D. Johnson
Harold Jacobsen
Bill Morgan (non-voting member)

Year Established: 1970

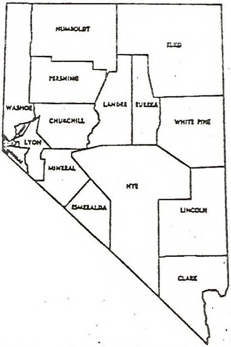
1960 Census: N/A

1970 Census: 26,000

1980 Estimate: 73,300*

Area: 511 sq. miles

* includes seasonal residents



Commission Meets: 4th Wednesday of each month at 10:00 A.M., location varies.

Planning Contact: Philip A. Overeynder

Total No. of planning staff and support staff - 7

Planning Budget 1979-80 (Including Federal Funds): $320,330

Programs and Projects (See #34)

* TRPA has functioned primarily in the Nevada Counties since 1978. However a new bi-state compact has recently been approved. TRPA will have greatly expanded staff and increased planning and enforcement capabilities in the future.

(35) TAHOE REGIONAL PLANNING AGENCY (TRPA) ADVISORY PLANNING COMMISSION[1]

Planning Area: (See #34)

Address: (See #34)

Phone No.: (916) 541-0246

Chairman: Philip A. Overeynder

Other Members: Neal Walton*
Ken Milam*
Bill Combs*
James P. Scribner*
John Hoole*
Verne Rosse*
Roy Hampson*
Steve Bradhurst*
Ron Duncan *
David Minedew
Dick Pyle
Jon Hoefer

Year Established: 1970

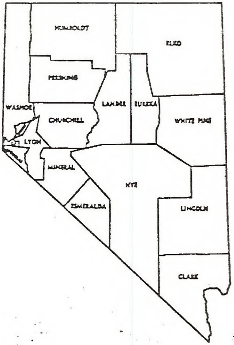
1960 Census: N/A

1970 Census: 26,000

1980 Estimate: 73,000*

Area: 511 sq. miles

*includes seasonal residents



Germaine McMorris**
Maurice Bidart** William Curtis (alternate)**
W. Richard Bailey**
Stan Hansen**

Commission Meets: 2nd Wednesday of each month, 10:00 A.M.,
Location varies

* Members by virtue of position

** Appointed Members

(35) continued

Planning Contact: Philip A. Overeynder

Total No. of planning staff and support staff - 7

Planning Budget 1979-80 (Including Federal Funds): $ 320,330

Programs and Projects

Completed: Tahoe Regional Plan (1971), Land Use, Grading Shoreline, and Subdivision Ordinances (1972), Land Capabilities Map (1971), Timber Harvesting Ordinance (1973), Tree Conservation Ordinance (1973), Housing Element (1973), Capital Programming (1973), Shorezone Ordinance (1976), Housing and Land Date Study, Natural Hazards Study, Urban Design for Tahoe City, Financial & Feasibility Study for Tahoe Basin, Conservation, Recreation & Open Space Element, Housing Element, Capital Improvement Program. Urban Design Study for Kings Beach, Carnelian Way, Tahoe Vista & North Shoreline, 208 Water Quality Management Plan

In Process: Air Quality, Water Quality and Transportation Planning, Project Review and Enforcement

Planned: General Plan Update and Establishment of Threshold Carrying Capacities for the Lake Tahoe Basin.

(36) WASHOE COUNTY (REGIONAL PLANNING COMMISSION OF RENO AND WASHOE COUNTY) See: Department of Regional Planning of Washoe County (38)

Year Established: 1946

1960 Census: 84,743

1970 Census: 121,068

1980 Estimate: 216,500

Area: 6,375 sq. miles

Planning Area: Washoe County

Address: P. O. Box 1286 (241 Ridge St.)
Reno, Nevada 89504

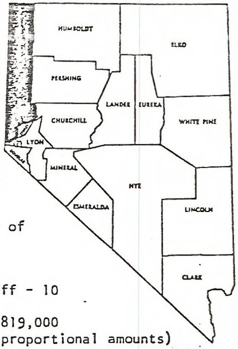
Phone No.: 785-4043

Chairman: R. E. 'Skip' Hansen 12-82

Vice Chairman: Brian Whelan 1-82

Other Members:

Pamela Wilcox	12-80
Walter Henderson	1-83
Joseph Mastroianni	1-81
Jack Sheehan	1-83
Michael Tuohy	12-82
W. W. White	12-81



Commission Meets: 1st and 3rd Tuesday every month, and (frequently) 1st and 3rd Wednesday every month, Reno City Hall Council Chambers

Planning Contact: Donald M. Bayer, Acting Director of Planning

Total no. of planning staff - 21
No. of professional planning staff - 10

Planning Budget 1979-80 (Including Federal Funds) $819,000 (Reno and Washoe County provide proportional amounts)

Programs and Projects

Completed: Yearly Work Program, Hearing Examiner Feasibility Study, Legislative Program. Ongoing processing of zone changes, variances, special use permits, major project review, subdivisions, parcel maps, etc. On-going processing of land use update and general plans for various County districts; current population projections.

In Process: Work programs, Centralized Data Bank, Zone Changes, Major Project Reviews, Variances, Special Use Permits, Subdivisions, Street Names and Directory, Street Abandonments, Base Map Updates. General Plan Update for Truckee Meadows, City of Reno and Districts in Washoe County. Streets & Highways Master Plan Amendments, Population Projections, Base Mapping. Local vs. Areawide Planning Issues Study; Growth Management Plan.

(37) WASHOE COUNCIL OF GOVERNMENTS (WCOG)

See: Department of Regional Planning of Washoe County

Year Established: 1971

1960 Census: 84,743

1970 Census: 121,068

1980 Estimate: 216,500

Area: 6,375 sq. miles

Planning Area: Washoe County

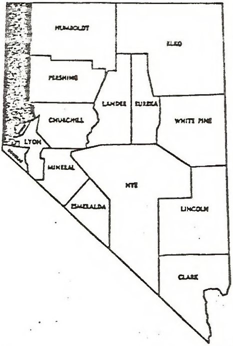
Address: P.O. Box 1286
Reno, Nevada 89504

Phone No.: 785-4043

Chairman: Bill Wallace

Vice-Chairman: Jean Stoess

Other Members:
Ed Oaks
Bruno Menicucci
Ed Spoon
Janice Pine
James Underwood
Joe McClelland
Barbara Bennett
James C. Lillard
Bernard S. Gulla
F. W. "Bill" Farr
Ed Hastings
Ron Player
Don Spanier
Valdo Renucci
Steven Brown
Bennie Ferrari



Council Meets: 4th Friday of each month at 9:00 A.M.
Centennial Coliseum

Planning Contact: Charles R. Breese, Jr., Executive Director

Total No. of staff - 6
No. of professional planning staff - 3

Planning Budget 1978-79 (Including Federal Funds): $819,000

(38) DEPARTMENT OF REGIONAL PLANNING OF WASHOE COUNTY

(Combined staffs of Regional Planning Commission
of Reno and Washoe County and Washoe
Council of Governments)

Year Established: 1978

1960 Census: 84,743

1970 Census: 121,068

1980 Estimate: 216,500

Area: 6,375 sq. miles

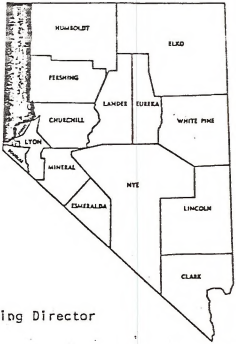
Planning Area: Washoe County

Address: P.O. Box 1286 (241 Ridge Street)
Reno, Nevada 89504

Phone No.: 785-4043

Chairman:

Other Members



Planning Contact: Donald M. Bayer, Acting Coordinating Director

Total No. Of Staff - 27
No. of Professional planning staff - 13

Planning Budget 1979- 80 (Including Federal Funds): $ 819,000

Programs and Projects

Completed:	For individual information, please see "Washoe County (Regional Planning
In Process:	Commission of Reno and Washoe County)" and/or "Washoe
Planned:	Council of Governments (WCOG)"

(43) CITY OF YERINGTON PLANNING BOARD

Year Established: 1968

1960 Census: 1,764

1970 Census: 2,010

1980 Estimate: 3,300

Area: 1.55 sq. miles

Planning Area: City of Yerington

Address: 102 S. Main
Yerington, Nevada 89447

Phone No.: 463-3511

Chairman:	Tod Carlini	6-81
Vice Chairman:		
Secretary:	Mrs. Jean Dini	6-82
Other Members:	Joe Lommori	6-80
	Claude Chisum	6-82
	Kirk Bodenstein	6-83
	George O'Keefe	6-83
	Patrick E. Jacobson	6-81

Commission Meets: Third Wednesday evenings at the Yerington City Hall

Planning Contact: Frank M. McGowan, City Manager

Total no. of planning staff - 0

Planning Budget 1979-80 (Including Federal Funds): 0

Programs and Projects

Completed: Zoning Ordinance (1976), Subdivision Ordinance (1976) Master Plan (1976), Trailer & Mobile Home Ordinance.

In Process: Subdivision Ordinance

Planned: Housing Element

PLANNING AREA ANALYSIS
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PLANNING AREA ANALYSIS
PUBLIC CONTACTS

The following individuals and organizations were consulted during the preparation of this document:

Batteate, Earl, Rancher, 10/80
Bently, Daniel and Oliver, Ranchers, 9/80
Brewer, Clyde, Alpine County Treasurer, 10/80
Bruns, Hubert, Rancher, 8/80
Burnham, Andrew and John Renz, Douglas County Department of Planning, 5/80
Culbert, Dan, Nevada State Employment Security Research Section, 5/80
Curran, Jim, Trapper, 1/81
Day, Betty, Lyon County Commissioners Office, 9/80
DePaoli, Harold, Rancher, 8/80
Dressler, Fred, Rancher, 8/80
Eckert, Dr. Richard, Range Department, University of Nevada Reno, 9/80
Erickson, Robert and Andy Grose, Nevada State Legislative Council Bureau, 11/80.
Firth, Bob, Sierra Pacific Power Company 10/80
Gallian, Dan, Washoe County Regional Transportation Agency, 10/80
Gaspari, Joe and Emilio, Ranchers, 8/80
Gustafson, Ron, U. S. Department of Agriculture, 12/80
Hanks, Doyle, Robert Larkin, and Jack Fitzwater, U. S. Forest Service, 10-11/80.
Hoffman, Sue, Washoe County Cooperative Extension, 9/80
Hughey, Vance, Nevada State Planning Coordinators Office, 5/80
Killian, Paul, Washoe County School District, 10/80
Klieforth, Hal, Desert Research Institute, 12/80
Lawson-Gilgovan, Mike, Washoe County Regional Planning Department, 4-11/80.
Marshall, Robert, Rancher, 7/80
Mahoney, Steve, Nevada State Department of Agriculture, 11/80
McLachlan, JoAnne, Storey County Commissioners Office, 6-9/80
Molde, Donald, Nevada Humane Society, 11/80
Mount, April and Andy Mose, Washoe Tribe, 9-11/80
Nappe, Tina and Rose Strickland, Sierra Club 10/80
Pilkington, H. Dean, and Wendy Merril, AMAX Explorations 11/80
Ricci, Butch, Rancher, 8/80
Rice, David, Gary Herran, and Larry Barngrover, Nevada Department of Wildlife, 9-10/80.
Ryan, Dale and Sheila Gallegos, Carson City Public Works Department 10/80.
Schulenberg, Robert, California Department of Fish and Game, 1/81
Sullivan, Robert, Carson River Basin Council of Governments, 5/80
Sullivan, Walter, Carson City Planning Department, 5/80
Torell, Allen and Mike Baughman, Resource Concepts Inc.,7-12/80
Turnbeaugh, Leonard, Alpine County Public Works, 6-8/80

List of Preparers

David Loomis, Regional Economist
Population, Social Economic Well Being, Econimic Structure, Future Trends, Range Management: Livestock, Problems and Issues Summary, Infrastructure and Bureau Relationships.

Linda Armentrout, Outdoor Recreation Planner
Public Attitudes and Values, Water, Soil and Air Quality, Wilderness

Tom Abbet, Outdoor Recreation Planner
Recreation, Visual Resource Management

John Pinzl, Realty Specialist
Lands

Mallery, Harrie, Geologist
Minerals

Mike McGinty, Forester
Forest Products

Don Anderson, Forester
Forest Products

Tim Reuwsatt, Wild Horse and Burro Specialist
Range Management: Wild Horses

Liz Warner, Wildlife Biologist
Wildlife

Brian Hatoff, Archaeologist
Cultural Resources Management

Appendix A

County Income and Employment

Reno Region Income
1978

Labor and Proprietors Income by Place of Work	
Farm	$ 12,147,000
Mining	16,192,000
Construction	229,163,000
Manufacturing	157,774,000
Transportation and Public Utilities	147,669,000
Wholesale and Retail Trade	288,157,000
Finance, Insurance, and Real Estate	102,189,000
Services	639,960,000
Federal Government	62,653,000
State and Local Government	254,407,000
Total	$1,908,424,000

Less: Residence Adjustment and Social Insurance	$ 170,744,000
Labor and Proprietors Income by Residence	1,737,680,000
Plus: Dividends, Interest, Rent and Transfer Payments	584,481,000
Total	$2,322,161,000

Reno Region Employment
1978

Employment by Place of Work

Farm	$ 593
Mining	921
Construction	10,748
Manufacturing	10,397
Transportation and Public Utilities	7,537
Wholesale and Retail Trade	25,416
Finance Insurance and Real Estate	6,317
Services	55,186
Federal Government	4,329
State and Local Government	20,851
Total	$142,298

(32-031) WASHOE NEVADA PERSONAL INCOME BY MAJOR SOURCES 1973-78 (THOUSANDS OF DOLLARS)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK 3/						
BY TYPE						
WAGE AND SALARY DISBURSEMENTS	612,508	657,656	730,454	852,056	1,027,411	1,289,136
OTHER LABOR INCOME	31,457	35,197	44,108	54,200	68,801	86,059
PROPRIETORS INCOME 4/	55,324	49,259	50,269	67,076	89,769	100,155
FARM	2,205	1,388	1,312	1,098	864	1,481
NON-FARM 4/	53,119	47,871	48,957	65,978	88,905	98,674
BY INDUSTRY						
FARM	2,886	2,164	2,125	1,983	1,864	2,608
NON-FARM	696,803	739,948	822,706	971,349	1,184,117	1,472,742
PRIVATE	583,626	613,330	675,083	805,646	1,002,658	1,262,785
AG.SERV.,FOR.,FISH.,AND OTHER 5/	2,183	2,368	2,658	3,208	4,223	5,075
MINING	2,903	3,127	5,171	5,284	9,153	10,136
CONSTRUCTION	80,470	68,890	67,791	95,577	146,925	179,866
MANUFACTURING	47,098	50,480	57,270	69,684	93,012	119,516
NON-DURABLE GOODS	18,104	20,352	23,163	27,490	31,095	38,197
DURABLE GOODS	28,994	30,128	34,107	42,194	61,917	81,319
TRANSPORTATION AND PUBLIC UTILITIES	71,239	78,465	86,355	95,993	109,804	132,281
WHOLESALE TRADE	41,441	50,860	54,097	60,525	69,554	81,181
RETAIL TRADE	87,738	95,237	102,560	118,305	133,087	165,018
FINANCE, INSURANCE, AND REAL ESTATE	40,206	41,010	43,316	54,684	73,509	89,263
SERVICES	210,350	222,893	255,865	302,386	363,391	480,449
GOVERNMENT AND GOVERNMENT ENTERPRISES	113,177	126,618	147,623	165,703	181,459	209,957
FEDERAL, CIVILIAN	25,749	29,581	34,805	40,655	40,818	47,395
FEDERAL, MILITARY	2,579	2,694	2,722	2,974	3,004	3,263
STATE AND LOCAL	84,849	94,343	110,016	122,074	137,637	159,299
DERIVATION OF PERSONAL INCOME BY PLACE OF RESIDENCE						
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	699,689	742,112	824,831	973,332	1,185,981	1,475,350
LESS: PERSONAL CONTRIBUTIONS FOR SOCIAL INSURANCE BY PLACE OF WORK	32,123	38,677	42,691	45,992	54,280	67,049
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	667,566	703,435	782,140	927,340	1,131,701	1,408,301
PLUS: RESIDENCE ADJUSTMENT	-6,169	-6,838	-8,588	-13,966	-21,495	-27,460
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESIDENCE	661,397	696,597	773,552	913,374	1,110,206	1,380,841
PLUS: DIVIDENDS, INTEREST, AND RENT 7/	127,870	150,858	175,331	200,014	230,747	267,328
PLUS: TRANSFER PAYMENTS	81,237	98,537	133,083	145,308	162,155	173,333
PERSONAL INCOME BY PLACE OF RESIDENCE	870,504	953,992	1,081,966	1,258,696	1,503,108	1,821,502
PER CAPITA PERSONAL INCOME (DOLLARS)	6,370	6,727	7,464	8,369	9,524	11,161
TOTAL POPULATION (THOUSANDS)	136.6	141.8	145.0	150.4	157.8	163.2

1/ ESTIMATES BASED ON 1967 SIC. 2/ ESTIMATES BASED ON 1972 SIC.
3/ CONSISTS OF WAGE AND SALARY DISBURSEMENTS, OTHER LABOR INCOME, AND PROPRIETORS' INCOME.
PRIMARY SOURCE FOR PRIVATE NON-FARM WAGES: ES-202 COVERED WAGES -NEVADA EMPLOYMENT SECURITY DEPARTMENT
4/ INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR NON-FARM PROPRIETORS.
5/ INCLUDES WAGES AND SALARIES OF U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.
7/ INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR RENTAL INCOME OF PERSONS.

(32-510) CARSON CITY - INDEPENDENT CITY

PERSONAL INCOME BY MAJOR SOURCES 1973-78 (THOUSANDS OF DOLLARS)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK 3/						
BY TYPE						
WAGE AND SALARY DISBURSEMENTS	82,236	95,234	106,920	123,360	143,738	179,928
OTHER LABOR INCOME	3,007	3,663	4,620	5,831	7,467	9,925
PROPRIETORS INCOME 4/	10,224	8,735	8,970	12,138	16,264	18,148
FARM	403	20	18	1	-48	3
NON-FARM 4/	9,821	8,715	8,952	12,137	16,312	18,145
BY INDUSTRY						
FARM	484	113	116	107	72	137
NON-FARM	94,983	107,519	120,394	141,222	167,397	207,864
PRIVATE	49,048	55,002	57,468	71,503	90,289	117,561
AG.SERV.,FOR.,FISH.,AND OTHER 5/	225	353	398	389	506	672
MINING	654	464	433	-313	-118	(L)
CONSTRUCTION	9,358	9,980	8,085	11,574	16,625	21,862
MANUFACTURING	4,708	5,797	7,946	9,868	11,420	16,651
NON-DURABLE GOODS	1,201	1,393	1,289	1,544	4,314	2,545
DURABLE GOODS	3,507	4,404	6,657	8,324	7,106	14,106
TRANSPORTATION AND PUBLIC UTILITIES	3,595	4,596	5,028	5,701	6,657	7,977
WHOLESALE TRADE	1,190	1,366	1,425	1,760	2,340	3,043
RETAIL TRADE	10,638	12,078	11,819	15,488	18,121	22,285
FINANCE, INSURANCE, AND REAL ESTATE	2,556	3,185	2,293	3,203	4,828	5,944
SERVICES	16,124	17,183	20,041	23,833	29,910	37,155
GOVERNMENT AND GOVERNMENT ENTERPRISES	45,935	52,517	62,926	69,719	77,108	90,303
FEDERAL, CIVILIAN	5,925	6,878	8,251	9,075	7,927	9,308
FEDERAL, MILITARY	272	308	341	349	345	376
STATE AND LOCAL	39,738	45,331	54,334	60,295	68,836	80,619
DERIVATION OF PERSONAL INCOME BY PLACE OF RESIDENCE						
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	95,467	107,632	120,510	141,329	167,469	208,001
LESS: PERSONAL CONTRIBUTIONS FOR SOCIAL INSURANCE BY PLACE OF WORK	4,849	6,278	6,734	7,123	8,007	9,495
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	90,618	101,354	113,776	134,206	159,462	198,506
PLUS: RESIDENCE ADJUSTMENT	-2,346	-3,132	-3,216	-4,163	-4,464	-6,612
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESIDENCE	88,272	98,222	110,560	130,043	154,998	191,894
PLUS: DIVIDENDS, INTEREST, AND RENT 7/	14,738	18,495	19,132	23,809	29,365	34,151
PLUS: TRANSFER PAYMENTS	13,050	16,081	22,331	25,464	30,456	33,587
PERSONAL INCOME BY PLACE OF RESIDENCE	116,060	132,798	152,023	179,316	214,819	259,632
PER CAPITA PERSONAL INCOME (DOLLARS)	5,327	5,614	6,018	6,918	7,914	8,814
TOTAL POPULATION (THOUSANDS)	21.8	23.7	25.3	25.9	27.1	29.5

1/ ESTIMATES BASED ON 1967 SIC. 2/ ESTIMATES BASED ON 1972 SIC.
3/ CONSISTS OF WAGE AND SALARY DISBURSEMENTS, OTHER LABOR INCOME, AND PROPRIETORS' INCOME.
PRIMARY SOURCE FOR PRIVATE NON-FARM WAGES: ES-202 COVERED WAGES -NEVADA EMPLOYMENT SECURITY DEPARTMENT
4/ INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR NON-FARM PROPRIETORS.
5/ INCLUDES WAGES AND SALARIES OF U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.
7/ INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR RENTAL INCOME OF PERSONS.

1051 DOUGLAS NEVADA PERSONAL INCOME BY MAJOR SOURCES 1973-78 (THOUSANDS OF DOLLARS)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
LABOR AND PROPRIETORS INCOME BY PLACE OF WORK 3/						
BY TYPE						
WAGE AND SALARY DISBURSEMENTS	75,406	86,234	91,599	102,035	119,024	154,496
OTHER LABOR INCOME	2,986	3,538	4,402	5,190	6,449	8,427
PROPRIETORS INCOME 4/	8,194	6,772	6,689	8,532	11,211	13,091
FARM	2,437	1,828	1,750	1,162	511	1,052
NON-FARM 4/	5,757	4,944	4,939	7,370	10,700	12,039
BY INDUSTRY						
FARM	3,464	3,050	3,035	2,559	2,088	2,821
NON-FARM	83,122	93,494	99,655	113,198	134,596	173,193
PRIVATE	78,968	88,780	94,088	106,752	127,394	164,888
AG. SERV., FOR., FISH., AND OTHER 5/	(D)	322	257	296	387	465
MINING	(D)	-181	-256	-483	-372	-98
CONSTRUCTION	7,914	7,644	6,446	8,692	12,368	22,371
MANUFACTURING	4,301	5,399	6,493	7,883	9,986	12,515
NON-DURABLE GOODS	481	344	131	193	212	336
DURABLE GOODS	3,820	5,055	6,362	7,690	9,774	12,179
TRANSPORTATION AND PUBLIC UTILITIES	3,032	3,408	3,714	3,946	4,831	5,552
WHOLESALE TRADE	359	472	758	708	909	1,116
RETAIL TRADE	4,150	4,365	4,648	5,365	6,824	8,341
FINANCE, INSURANCE, AND REAL ESTATE	2,472	2,785	1,781	2,825	4,232	5,326
SERVICES	56,387	64,566	70,247	77,520	88,229	109,300
GOVERNMENT AND GOVERNMENT ENTERPRISES	4,154	4,714	5,567	6,446	7,202	8,305
FEDERAL, CIVILIAN	470	493	557	726	693	838
FEDERAL, MILITARY	107	123	139	146	144	157
STATE AND LOCAL	3,577	4,098	4,871	5,574	6,365	7,310
VATION OF PERSONAL INCOME BY PLACE OF RESIDENCE						
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	86,586	96,544	102,690	115,757	136,684	176,014
LESS: PERSONAL CONTRIBUTIONS FOR SOCIAL INSURANCE BY PLACE OF WORK	3,718	4,777	5,060	5,142	5,952	7,719
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	82,868	91,767	97,630	110,615	130,732	168,295
PLUS: RESIDENCE ADJUSTMENT	-34,811	-38,883	-40,254	-42,442	-47,646	-61,541
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESIDENCE	48,057	52,884	57,376	68,173	83,086	106,754
PLUS: DIVIDENDS, INTEREST, AND RENT 7/	14,005	18,834	19,267	23,380	28,206	32,660
PLUS: TRANSFER PAYMENTS	5,304	6,684	9,039	10,151	11,698	12,677
PERSONAL INCOME BY PLACE OF RESIDENCE	67,366	78,402	85,682	101,704	122,990	152,091
PER CAPITA PERSONAL INCOME (DOLLARS)	7,067	7,511	7,689	8,500	9,520	10,638
TOTAL POPULATION (THOUSANDS)	9.5	10.4	11.1	12.0	12.9	14.3

ESTIMATES BASED ON 1967 SIC. 2/ ESTIMATES BASED ON 1972 SIC.
CONSISTS OF WAGE AND SALARY DISBURSEMENTS, OTHER LABOR INCOME, AND PROPRIETORS' INCOME.
PRIMARY SOURCE FOR PRIVATE NON-FARM WAGES: ES-202 COVERED WAGES -NEVADA EMPLOYMENT SECURITY DEPARTMENT
INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR NON-FARM PROPRIETORS.
INCLUDES WAGES AND SALARIES OF U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.
INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR RENTAL INCOME OF PERSONS.
[illegible]

[illegible] LYON NEVADA PERSONAL INCOME BY MAJOR SOURCES 1973-78 (THOUSANDS OF DOLLARS)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK 3/						
BY TYPE						
WAGE AND SALARY DISBURSEMENTS	20,596	22,340	24,179	24,314	26,822	27,445
OTHER LABOR INCOME	1,795	1,725	2,565	2,628	3,063	2,416
PROPRIETORS INCOME 4/	8,440	6,488	6,653	5,719	5,933	7,709
FARM	5,839	4,285	4,672	3,466	2,714	3,887
NONFARM 5/	2,601	2,203	1,981	2,253	3,219	3,822
BY INDUSTRY						
FARM	7,384	6,126	6,606	5,569	5,088	6,550
NONFARM	23,447	24,427	26,791	27,092	30,730	31,020
[illegible]	19,547	20,019	21,822	21,643	24,743	24,156
[illegible] AND OTHER 5/	91	111	160	180	234	298
[illegible]	[illegible]	7,671	9,525	8,146	8,834	[illegible]
[illegible]	2,589	2,402	1,228	1,424	1,762	[illegible]
[illegible]	[illegible]	2,713	3,214	3,457	4,136	4,930
[illegible] GOODS	[illegible]	712	612	658	653	635
[illegible] GOODS	2,060	2,001	2,602	2,799	3,483	4,295
TRANSPORTATION AND PUBLIC UTILITIES	1,285	1,413	1,479	1,556	1,715	1,859
WHOLESALE TRADE	433	516	691	790	834	901
RETAIL TRADE	3,008	3,136	3,228	3,423	3,636	4,101
FINANCE, INSURANCE, AND REAL ESTATE	365	373	459	525	742	1,220
[illegible]	[illegible]	1,664	1,818	2,142	2,850	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	166	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] INCOME BY PLACE OF RESIDENCE						
[illegible] PROPRIETORS INCOME BY [illegible] WORK	[illegible]	30,553	33,397	[illegible]	[illegible]	37,570
[illegible] CONTRIBUTIONS FOR SOCIAL [illegible] BY PLACE OF WORK	[illegible]	[illegible]	1,446	[illegible]	1,464	[illegible]
[illegible] PROPRIETORS INCOME BY [illegible]	[illegible]	29,217	31,951	31,332	34,354	[illegible]
[illegible] ADJUSTMENT	[illegible]	[illegible]	6,726	7,567	9,022	[illegible]
[illegible] PROPRIETORS INCOME BY [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	43,376	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12,027	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	10,935	11,145	[illegible]
[illegible] BY PLACE OF RESIDENCE	[illegible]	[illegible]	[illegible]	[illegible]	66,548	[illegible]
[illegible]	[illegible]	[illegible]	5,519	[illegible]	6,120	[illegible]
[illegible]	[illegible]	[illegible]	10.4	[illegible]	[illegible]	11.1

[illegible] DISBURSEMENTS, [illegible]

[illegible] 1972 SIC, [illegible] INCOME, [illegible]

(32-029) STOREY NEVADA PERSONAL INCOME BY MAJOR SOURCES 1973-78 (THOUSANDS OF DOLLARS)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK 3/						
BY TYPE						
WAGE AND SALARY DISBURSEMENTS	2,935	3,266	3,593	3,856	4,712	6,696
OTHER LABOR INCOME	204	235	292	313	381	552
PROPRIETORS INCOME 4/	338	173	191	145	386	548
NON-FARM 4/	338	173	191	145	386	548
BY INDUSTRY						
FARM	0	0	0	0	0	0
NON-FARM	3,477	3,674	4,076	4,314	5,479	7,796
PRIVATE	3,005	3,155	3,391	3,517	4,555	6,738
AG.SERV.,FOR.,FISH.,AND OTHER 5/	0	0	0	(L)	(D)	(D)
MINING	(D)	(D)	(D)	(D)	(D)	1,859
CONSTRUCTION	(D)	(D)	55	55	(D)	125
MANUFACTURING	(L)	(L)	77	65	117	132
NON-DURABLE GOODS	(L)	(L)	62	65	(D)	(D)
DURABLE GOODS	(L)	(L)	(L)	0	(D)	(D)
TRANSPORTATION AND PUBLIC UTILITIES	(D)	(D)	(D)	(D)	(D)	(D)
WHOLESALE TRADE	55	58	(L)	(L)	(D)	(D)
RETAIL TRADE	956	1,000	1,039	1,255	1,413	1,774
FINANCE, INSURANCE, AND REAL ESTATE	(D)	(D)	(D)	54	106	218
SERVICES	286	281	287	350	510	523
GOVERNMENT AND GOVERNMENT ENTERPRISES	472	519	685	797	924	1,058
FEDERAL, CIVILIAN	52	54	141	194	228	257
FEDERAL, MILITARY	10	11	13	13	13	14
STATE AND LOCAL	410	454	531	590	683	787
DERIVATION OF PERSONAL INCOME BY PLACE OF RESIDENCE						
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	3,477	3,674	4,076	4,314	5,479	7,796
LESS: PERSONAL CONTRIBUTIONS FOR SOCIAL INSURANCE BY PLACE OF WORK	159	193	214	206	244	339
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	3,318	3,481	3,862	4,108	5,235	7,457
PLUS: RESIDENCE ADJUSTMENT	-318	-338	-346	-294	-403	-810
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESIDENCE	3,000	3,143	3,516	3,814	4,832	6,647
PLUS: DIVIDENDS, INTEREST, AND RENT 7/	618	722	790	860	952	1,103
PLUS: TRANSFER PAYMENTS	443	505	645	726	840	884
PERSONAL INCOME BY PLACE OF RESIDENCE	4,061	4,370	4,951	5,400	6,624	8,634
PER CAPITA PERSONAL INCOME (DOLLARS)	4,615	4,659	4,976	5,128	5,872	7,165
TOTAL POPULATION (THOUSANDS)	.9	.9	1.0	1.1	1.1	1.2

1/ ESTIMATES BASED ON 1967 SIC. 2/ ESTIMATES BASED ON 1972 SIC.
3/ CONSISTS OF WAGE AND SALARY DISBURSEMENTS, OTHER LABOR INCOME, AND PROPRIETORS' INCOME.
PRIMARY SOURCE FOR PRIVATE NON-FARM WAGES: ES-202 COVERED WAGES -NEVADA EMPLOYMENT SECURITY DEPARTMENT
4/ INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR NON-FARM PROPRIETORS.
5/ INCLUDES WAGES AND SALARIES OF U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.
7/ INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR RENTAL INCOME OF PERSONS.
(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION, DATA ARE INCLUDED IN TOTALS.
(L) LESS THAN $50,000. DATA ARE INCLUDED IN TOTALS.

06003 ALPINE

CALIFORNIA

PERSONAL INCOME BY MAJOR SOURCES 1973-78 (THOUSANDS OF DOLLARS)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK 3/						
BY TYPE						
WAGE AND SALARY DISBURSEMENTS	1,562	1,593	1,358	2,143	1,886	3,067
OTHER LABOR INCOME	66	72	76	163	133	223
PROPRIETORS INCOME 4/	187	151	109	148	265	403
NON-FARM 4/	187	151	109	148	265	403
BY INDUSTRY						
FARM	30	40	46	47	47	41
NON-FARM	1,785	1,776	1,497	2,407	2,237	3,652
PRIVATE	1,251	1,197	872	1,799	1,694	3,089
MINING	(D)	(D)	(D)	-187	(D)	-87
CONSTRUCTION	50	67	106	179	236	271
MANUFACTURING	(D)	(D)	241	686	(D)	(L)
NON-DURABLE GOODS	0	0	(D)	(D)	(D)	(L)
DURABLE GOODS	(D)	(D)	(D)	(D)	(L)	(L)
TRANSPORTATION AND PUBLIC UTILITIES	(L)	(L)	(L)	(D)	(L)	(L)
RETAIL TRADE	144	137	193	275	327	314
FINANCE, INSURANCE, AND REAL ESTATE	(D)	(D)	(D)	(D)	66	218
SERVICES	757	893	353	739	(D)	2,316
GOVERNMENT AND GOVERNMENT ENTERPRISES	534	579	625	608	543	563
FEDERAL, CIVILIAN	46	94	143	164	134	130
FEDERAL, MILITARY	3	5	5	5	6	6
STATE AND LOCAL	485	480	477	439	403	427
DERIVATION OF PERSONAL INCOME BY PLACE OF RESIDENCE						
TOTAL LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	1,815	1,816	1,543	2,454	2,284	3,693
LESS: PERSONAL CONTRIBUTIONS FOR SOCIAL INSURANCE BY PLACE OF WORK	126	127	119	171	165	238
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	1,669	1,689	1,424	2,283	2,119	3,455
PLUS: RESIDENCE ADJUSTMENT	103	135	176	150	219	223
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESIDENCE	1,772	1,824	1,600	2,433	2,338	3,678
PLUS: DIVIDENDS, INTEREST, AND RENT 7/	517	564	355	523	727	837
PLUS: TRANSFER PAYMENTS	536	576	751	827	842	917
PERSONAL INCOME BY PLACE OF RESIDENCE	2,825	2,984	2,706	3,783	3,907	5,432
PER CAPITA PERSONAL INCOME (DOLLARS)	4,165	4,043	3,399	4,552	4,246	5,362
TOTAL POPULATION (THOUSANDS)	.7	.7	.8	.8	.9	1.0

1/ ESTIMATES BASED ON 1967 SIC.

2/ ESTIMATES BASED ON 1972 SIC.

3/ CONSISTS OF WAGE AND SALARY DISBURSEMENTS, OTHER LABOR INCOME, AND PROPRIETORS' INCOME.

PRIMARY SOURCE FOR PRIVATE NON-FARM WAGES: ES-202 COVERED WAGES -CALIFORNIA DEPARTMENT OF HUMAN RESOURCES DEVEL.

4/ INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR NON-FARM PROPRIETORS.

5/ INCLUDES WAGES AND SALARIES OF U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.

7/ INCLUDES THE CAPITAL CONSUMPTION ADJUSTMENT FOR RENTAL INCOME OF PERSONS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION, DATA ARE INCLUDED IN TOTALS.

(L) LESS THAN $50,000, DATA ARE INCLUDED IN TOTALS.

REGIONAL ECONOMICS INFORMATION SYSTEM
BUREAU OF ECONOMIC ANALYSIS

132-031) WASHOE NEVADA

EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES 1973-78

(FULL- AND PART-TIME)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
EMPLOYMENT BY PLACE OF WORK						
TOTAL EMPLOYMENT 3/	76,753	78,499	81,377	87,842	98,171	113,750
NUMBER OF PROPRIETORS	4,746	4,968	5,009	5,176	5,609	6,066
FARM PROPRIETORS	193	187	146	149	149	148
NONFARM PROPRIETORS	4,553	4,781	4,863	5,027	5,460	5,918
TOTAL WAGE AND SALARY EMPLOYMENT	72,007	73,531	76,368	82,666	92,562	107,684
FARM	101	102	102	119	115	124
NON-FARM	71,906	73,429	76,266	82,547	92,447	107,560
PRIVATE	59,534	60,485	62,362	68,081	77,339	91,348
AG.SERV.,FOR.,FISH.,AND OTHER 4/	185	207	233	257	302	357
MINING	230	260	344	387	558	567
CONSTRUCTION	5,383	4,324	3,789	4,702	7,052	8,384
MANUFACTURING	4,573	4,717	4,905	5,567	6,785	7,910
NON-DURABLE GOODS	1,865	1,957	2,101	2,310	2,361	2,639
DURABLE GOODS	2,708	2,760	2,804	3,257	4,424	5,271
TRANSPORTATION AND PUBLIC UTILITIES	5,572	5,701	5,613	5,664	5,973	6,704
WHOLESALE TRADE	3,771	4,296	4,241	4,380	4,863	5,176
RETAIL TRADE	11,401	11,964	12,138	13,565	14,162	16,428
FINANCE,INSURANCE,AND REAL ESTATE	3,927	4,174	4,112	4,468	5,015	5,574
SERVICES	24,497	24,842	26,987	29,091	32,629	40,248
GOVERNMENT AND GOVERNMENT ENTERPRISES	12,372	12,944	13,904	14,466	15,108	16,212
FEDERAL, CIVILIAN	1,928	2,031	2,257	2,419	2,425	2,477
FEDERAL, MILITARY	1,046	1,116	1,050	1,039	895	897
STATE AND LOCAL	9,398	9,797	10,597	11,008	11,788	12,838

1/ ESTIMATES BASED ON 67 SIC.
2/ ESTIMATES BASED ON 72 SIC.
3/ CONSISTS OF WAGE AND SALARY JOBS PLUS NUMBER OF PROPRIETORS.
4/ INCLUDES NUMBER OF JOBS HELD BY U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.
PRIMARY SOURCE FOR PRIVATE NON-FARM EMPLOYMENT: ES-202 COVERED WAGES - NEVADA EMPLOYMENT SECURITY DEPT.

TABLE 25.00

APRIL, 1980

REGIONAL ECONOMIC INFORMATION SYSTEM
BUREAU OF ECONOMIC ANALYSIS

(32-005) DOUGLAS NEVADA EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES 1973-78

(FULL- AND PART-TIME)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
EMPLOYMENT BY PLACE OF WORK						
TOTAL EMPLOYMENT 3/	10,270	11,111	11,560	12,263	13,604	16,198
NUMBER OF PROPRIETORS	660	722	734	781	861	925
FARM PROPRIETORS	111	114	89	91	91	90
NONFARM PROPRIETORS	549	608	645	690	770	835
TOTAL WAGE AND SALARY EMPLOYMENT	9,610	10,389	10,826	11,482	12,743	15,273
FARM	145	150	150	175	169	182
NON-FARM	9,465	10,239	10,676	11,307	12,574	15,091
PRIVATE	8,886	9,603	9,966	10,528	11,728	14,187
AG.SERV.,FOR.,FISH.,AND OTHER 4/	(D)	15	17	16	16	21
MINING	(D)	(L)	(L)	(L)	(L)	16
CONSTRUCTION	510	440	338	392	548	981
MANUFACTURING	433	564	596	622	732	885
NON-DURABLE GOODS	43	30	13	17	21	32
DURABLE GOODS	390	534	583	605	711	853
TRANSPORTATION AND PUBLIC UTILITIES	229	252	250	233	289	311
WHOLESALE TRADE	35	42	67	52	69	77
RETAIL TRADE	440	462	464	488	623	766
FINANCE,INSURANCE,AND REAL ESTATE	235	299	208	232	266	305
SERVICES	6,976	7,524	8,022	8,488	9,170	10,825
GOVERNMENT AND GOVERNMENT ENTERPRISES	579	636	710	779	846	904
FEDERAL, CIVILIAN	41	44	48	57	46	57
FEDERAL, MILITARY	66	75	75	75	64	65
STATE AND LOCAL	472	517	587	647	736	782

1/ ESTIMATES BASED ON 67 SIC.
2/ ESTIMATES BASED ON 72 SIC.
3/ CONSISTS OF WAGE AND SALARY JOBS PLUS NUMBER OF PROPRIETORS.
4/ INCLUDES NUMBER OF JOBS HELD BY U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.
PRIMARY SOURCE FOR PRIVATE NON-FARM EMPLOYMENT: ES-202 COVERED WAGES - NEVADA EMPLOYMENT SECURITY DEPT.
(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL DATA. DATA ARE INCLUDED IN TOTALS.
(L) LESS THAN 10 WAGE AND SALARY JOBS.

TABLE 25.00 APRIL, 1980 REGIONAL ECONOMIC INFORMATION SYSTEM
BUREAU OF ECONOMIC ANALYSIS

(32-019) LYON

NEVADA

EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES 1973-78

(FULL- AND PART-TIME)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
EMPLOYMENT BY PLACE OF WORK						
TOTAL EMPLOYMENT 3/	3,185	3,212	3,167	3,149	3,321	3,281
NUMBER OF PROPRIETORS	604	614	555	564	561	610
FARM PROPRIETORS	283	283	222	226	225	224
NONFARM PROPRIETORS	321	331	333	338	356	386
TOTAL WAGE AND SALARY EMPLOYMENT	2,581	2,598	2,612	2,585	2,740	2,671
FARM	220	227	227	267	257	277
NON-FARM	2,361	2,371	2,385	2,318	2,483	2,394
PRIVATE	1,719	1,696	1,706	1,620	1,732	1,605
AG.SERV.,FOR.,FISH.,AND OTHER 4/	13	13	17	18	18	23
MINING	606	605	602	531	532	218
CONSTRUCTION	153	122	65	70	87	133
MANUFACTURING	248	233	252	241	266	325
NON-DURABLE GOODS	58	65	54	56	58	54
DURABLE GOODS	190	168	198	185	228	271
TRANSPORTATION AND PUBLIC UTILITIES	90	95	91	84	86	89
WHOLESALE TRADE	42	41	55	54	57	70
RETAIL TRADE	365	374	380	377	369	411
FINANCE,INSURANCE,AND REAL ESTATE	27	30	38	35	43	63
SERVICES	175	183	206	210	254	273
GOVERNMENT AND GOVERNMENT ENTERPRISES	642	675	679	698	751	789
FEDERAL, CIVILIAN	51	70	41	38	51	48
FEDERAL, MILITARY	73	78	73	70	58	58
STATE AND LOCAL	518	527	565	590	642	683

1/ ESTIMATES BASED ON 67 SIC.
2/ ESTIMATES BASED ON 72 SIC.
3/ CONSISTS OF WAGE AND SALARY JOBS PLUS NUMBER OF PROPRIETORS.
4/ INCLUDES NUMBER OF JOBS HELD BY U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.
PRIMARY SOURCE FOR PRIVATE NON-FARM EMPLOYMENT: ES-202 COVERED WAGES - NEVADA EMPLOYMENT SECURITY DEPT.

(32-029) STOREY NEVADA EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES 1973-78

(FULL- AND PART-TIME)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
EMPLOYMENT BY PLACE OF WORK						
TOTAL EMPLOYMENT 3/	423	448	459	472	530	649
NUMBER OF PROPRIETORS	61	65	69	73	79	86
NONFARM PROPRIETORS	61	65	69	73	79	86
TOTAL WAGE AND SALARY EMPLOYMENT	362	383	390	399	451	563
FARM	0	0	0	0	0	0
NON-FARM	362	383	390	399	451	563
PRIVATE	295	309	303	303	343	446
AG.SERV.,FOR.,FISH.,AND OTHER 4/	0	0	0	0	(D)	(D)
MINING	(D)	(D)	(D)	(D)	(D)	108
CONSTRUCTION	(D)	(D)	(L)	(L)	(D)	(L)
MANUFACTURING	(L)	(L)	15	14	12	(L)
NON-DURABLE GOODS	(L)	(L)	12	14	(D)	(D)
DURABLE GOODS	0	(L)	(L)	0	(D)	(D)
TRANSPORTATION AND PUBLIC UTILITIES	(D)	(D)	(D)	(D)	(D)	(D)
WHOLESALE TRADE	(L)	(L)	(L)	(L)	(D)	(D)
RETAIL TRADE	121	125	115	128	138	169
FINANCE,INSURANCE,AND REAL ESTATE	(D)	(D)	(D)	(L)	10	21
SERVICES	24	27	32	32	38	40
GOVERNMENT AND GOVERNMENT ENTERPRISES	67	74	87	96	108	117
FEDERAL, CIVILIAN	(L)	(L)	(L)	12	13	15
FEDERAL, MILITARY	(L)	(L)	(L)	(L)	(L)	(L)
STATE AND LOCAL	57	63	71	77	89	96

1/ ESTIMATES BASED ON 67 SIC.
2/ ESTIMATES BASED ON 72 SIC.
3/ CONSISTS OF WAGE AND SALARY JOBS PLUS NUMBER OF PROPRIETORS.
4/ INCLUDES NUMBER OF JOBS HELD BY U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.
PRIMARY SOURCE FOR PRIVATE NON-FARM EMPLOYMENT; ES-202 COVERED WAGES - NEVADA EMPLOYMENT SECURITY DEPT.
(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL DATA, DATA ARE INCLUDED IN TOTALS.
(L) LESS THAN 10 WAGE AND SALARY JOBS.

APRIL, 1980

REGIONAL ECONOMIC INFORMATION SYSTEM
BUREAU OF ECONOMIC ANALYSIS

TABLE 25.00

06-003) ALPINE CALIFORNIA

EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES 1973-78

(FULL- AND PART-TIME)

ITEM	1973 1/	1974 1/	1975 2/	1976 2/	1977 2/	1978 2/
EMPLOYMENT BY PLACE OF WORK						
TOTAL EMPLOYMENT 3/	241	269	198	317	300	421
NUMBER OF PROPRIETORS	16	19	20	21	24	26
NONFARM PROPRIETORS	16	19	20	21	24	26
TOTAL WAGE AND SALARY EMPLOYMENT	225	250	178	296	276	395
FARM	0	0	0	0	0	0
NON-FARM	225	250	178	296	276	395
PRIVATE	146	174	104	226	224	344
MINING	(D)	(D)	(D)	(L)	(D)	(L)
CONSTRUCTION	(L)	(L)	(L)	(L)	(L)	(L)
MANUFACTURING	(D)	(D)	23	60	(D)	(L)
NON-DURABLE GOODS	0	0	(D)	(D)	(D)	(L)
DURABLE GOODS	(D)	(D)	(D)	(D)	0	0
TRANSPORTATION AND PUBLIC UTILITIES	0	12	0	(D)	(L)	(L)
RETAIL TRADE	(L)	(L)	10	20	31	32
FINANCE, INSURANCE, AND REAL ESTATE	(D)	(D)	(D)	(D)	(L)	13
SERVICES	113	141	59	122	(D)	283
GOVERNMENT AND GOVERNMENT ENTERPRISES	79	76	74	70	52	51
FEDERAL, CIVILIAN	(L)	(L)	13	17	13	12
FEDERAL, MILITARY	(L)	(L)	(L)	(L)	(L)	(L)
STATE AND LOCAL	70	65	58	50	36	36

1/ ESTIMATES BASED ON 67 SIC.
2/ ESTIMATES BASED ON 72 SIC.
3/ CONSISTS OF WAGE AND SALARY JOBS PLUS NUMBER OF PROPRIETORS.
4/ INCLUDES NUMBER OF JOBS HELD BY U.S. RESIDENTS WORKING FOR INTERNATIONAL ORGANIZATIONS IN THE U.S.
PRIMARY SOURCE FOR PRIVATE NON-FARM EMPLOYMENT: ES-202 COVERED WAGES - CALIFORNIA DEPT. OF HUMAN RESOURCES DEVEL.
(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL DATA. DATA ARE INCLUDED IN TOTALS.
(L) LESS THAN 10 WAGE AND SALARY JOBS.

TABLE 25.00

APRIL, 1980

REGIONAL ECONOMIC INFORMATION SYSTEM
BUREAU OF ECONOMIC ANALYSIS

Appendix B

Reno Ranch Budgets

The following pages contain budgets for the four ranch categories chosen to represent Reno area ranchers. The first category, Cattle ranches on public range year long, contains only five ranchers but accounts for almost half the AUMs. These ranchers average 55 % dependencey on public lands and are very susceptible to any changes in public land grazing. They are all based in Washoe County. The second and third categories are cattle ranches which are on public lands primarily during the summer. They were broken down by percent of dependency on public lands. Those with greater than 9 percent dependency were placed in the high dependency category and those with less than 9 percent were placed in the low dependency group. The dividing point of 9 percent was chosen because it generally seperated the Washoe County based ranchers from the Carson Valley ranchers. The fourth category was sheep ranchers. Although these ranches varied significantly in size, dependency, and location base, they were grouped together since there were only five.

Data aquisition and verification included the following steps: 1) At least one, but no more than three ranchers in each category provided detailed budget information. 2) There was a detailed review of BLM operator files. 3) Budget data was reviewed in detail by livestock extension agents in Washoe and Douglas Counties. 4) Further detailed data was provided and budget development was done by the Economics Statistics and Cooperatives Service. 5) The budgets were given a final review by Resource Concepts Incorporated - a consulting firm employed by the N-3 Grazing Advisory Board.

These budgets will be used to provide background for planning and investment decisions as well as for economic impact analysis.

Nevada, Reno EIS Area Cattle Enterprise Yearlong Grazing

Item	Unit	Number	Average weight	Price Cwt	Total Value
Sales:					
Steer calves	Head	218	440	69.15	66,329
Heifer calves	Head	131	410	56.25	30,212
Yearling steers	Head	24	600	64.63	9,307
Yearling heifers	Head	—	—	—	—
Cull cows	Head	85	940	35.00	27,965
Total					133,813
Total/cow					205.87

Cash costs:	Total Value	Value/. Cow
BLM grazing fee	9,318	14.34
Forest grazing fee	—	—
Private range lease/rent	680	1.05
State lease	—	—
Hay (produce)	17,577	27.04
Hay (purchase)	4,123	6.34
Protein supplement	1,489	2.29
Irrigated pasture	1,778	2.74
Salt and mineral	1,027	1.58
Concentrate feeds	—	—
Veterinary and medicine	1,131	1.74
Hired trucking	650	1.00
Marketing	1,950	3.00
Fuel and lubricants	3,478	5.35
Repairs	3,777	5.81
Land taxes	5,902	9.08
Other taxes	702	1.08
Insurance	2,834	4.36
Interest on operating capital	4,654	7.16
General farm overhead	3,933	6.05
Other cash costs	—	—
Hired labor	26,650	41.00
Total cash costs	91,653	141.00
Other Costs:		
Family labor	14,775	22.73
Depreciation	13,897	21.38
Interest on investment		
Other than land	51,610	79.40
Interest on land	78,585	120.90
Total other costs	158,867	244.41
Total all costs	250,520	385.42
Return above cash costs	42,160	64.86
Return above cash costs and family labor	27,385	42.13
Return to total investment	13,488	20.75
Return to land	-38,122	-58.65

Production Assumptions: Herd size 650 head; 76% calf crop; 2% calf death loss to weaning; 17% replacement rate; 17 cows per bull; 4% cow loss.

Nevada, Reno EIS Area Cattle Enterprise Summer grazing Greater than 9% dependency

Item	Unit	Number	Average weight	Price Cwt	Total Value
Sales:					
Steer calves	Head	101	460	69.15	32,127
Heifer calves	Head	62	440	56.25	15,345
Yearling steers	Head	--	--	--	--
Yearling heifers	Head	--	--	--	--
Cull cows	Head	31	925	35.00	10,036
Total					57,508
Total/cow					221.18

Cash costs:	Total Value	Value/ Cow
BLM grazing fee	1,646	6.33
Forest grazing fee	73	.28
Private range lease/rent	2,730	10.50
State lease	--	--
Hay (produce)	8,439	32.46
Hay (purchase)	--	--
Protein supplement	1,186	4.56
Irrigated pasture	854	3.28
Salt and mineral	351	1.35
Concentrate feeds	--	--
Veterinary and medicine	530	2.04
Hired trucking	330	1.27
Marketing	260	1.00
Fuel and lubricants	2,153	8.28
Repairs	1,435	5.52
Land taxes	1,989	7.65
Other taxes	374	1.44
Insurance	1,222	4.70
Interest on operating capital	1,722	6.62
General farm overhead	2,122	8.16
Other cash costs	--	--
Hired labor	6,500	25.00
Total cash costs	33,916	130.45
Other Costs:		
Family labor	7,500	28.85
Depreciation	5,980	23.00
Interest on investment		
Other than land	20,900	80.38
Interest on land	53,196	204.60
Total other costs	87,576	336.83
Total all costs	121,492	467.28
Return above cash costs	23,592	90.74
Return above cash costs and family labor	16,092	61.89
Return to total investment	10,112	38.89
Return to land	-10,788	-41.49

Production Assumptions: Herd size 260 head; 80% calf crop; 3% calf death loss to weaning; 15% replacement rate; 22 cows per bull; 3% cow loss.

Nevada, Reno EIS Area Cattle Enterprise Summer grazing Less than 9% dependency

Item	Unit	Number	Average weight	Price Cwt	Total Value
Sales:					
Steer calves	Head	190	480	69.15	63,065
Heifer calves	Head	131	450	56.25	33,159
Yearling steers	Head	21	700	64.63	9,501
Yearling heifers	Head	--	--	--	--
Cull cows	Head	69	975	35.00	23,546
Total					129,271
Total/cow					243.91

Cash costs:	Total Value	Value/ Cow
BLM grazing fee	531	1.00
Forest grazing fee	577	1.09
Private range lease/rent	5,630	10.62
State lease	--	--
Hay (produce)	17,931	33.83
Hay (purchase)	2,385	4.50
Protein supplement	1,214	2.29
Irrigated pasture	10,585	19.97
Salt and mineral	837	1.58
Concentrate feeds	--	--
Veterinary and medicine	795	1.50
Hired trucking	530	1.00
Marketing	1,007	1.90
Fuel and lubricants	7,300	13.77
Repairs	2,549	4.81
Land taxes	6,752	12.74
Other taxes	572	1.08
Insurance	2,878	5.43
Interest on operating capital	4,060	7.66
General farm overhead	3,207	6.05
Other cash costs	--	--
Hired labor	10,600	20.00
Total cash costs	79,940	150.83
Other Costs:		
Family labor	12,778	24.11
Depreciation	9,185	17.33
Interest on investment		
Other than land	41,875	79.01
Interest on land	123,225	232.50
Total other costs	187,063	352.95
Total all costs	267,003	503.78
Return above cash costs	49,331	93.08
Return above cash costs and family labor	36,553	68.97
Return to total investment	27,368	51.64
Return to land	-14,507	-27.37

Production Assumptions: Herd size 530 head; 82% calf crop; 3% calf death loss to weaning; 15% replacement rate; 24 cows per bull; 2% cow loss.

Nevada, Reno EIS Area Sheep Enterprise All sizes

	Unit	Quantity	Average Weight	Price	Total Value
Sales:					
Slaughter Lambs	Head	--	--	--	--
Feeder Lambs	Head	3,735	87	61.17	198,769
Ewes	Head	450	100	15.00	6,750
Wool	Lbs.	4,629	9.5	.78	34,301
Wool Incentive Payment	Dol.	34,301	--	.48	16,464
Unshorn Lamb Payment	Cwt.	3,175	—	1.43	4,540
Total					260,824
Total/Ewe					57.96

	Total Value	Value/ Head
Cash Costs:		
BLM Permit	5,132	1.14
Forest Permit	2,081	.46
Irrigated Pasture	3,713	.83
Sheep Pellets	2,655	.59
Hay (Purch.)	44,560	9.90
Hay (Custom)	15,038	3.34
Grain (Purch.)	135	.03
Protein Supplement	315	.07
Other Feed	45	.01
Salt & Minerals	810	.18
Spray & Dipping	450	.10
Vet & Medicine	1,125	.25
Marketing	945	.21
Trucking	2,880	.64
Shearing & Tagging	9,900	2.20
Utilities	945	.21
Lamb Promotion	1,080	.24
Organizations	180	.04
Legal & Acct.	1,575	.35
Wool Storage	225	.05
Predator Control	4,590	1.02
Ram Death Loss	1,980	.44
Machine Fuel & Lube	3,105	.69
Machine Repair	2,790	.62
Equipment Repair	2,925	.65
Labor	50,940	11.32
Land Tax	8,865	1.97
Other Tax	585	.13
Insurance	3,105	.69
General Farm Overhead	3,555	.79
Interest on Oper. Capital	9,428	2.10
Total	185,657	41.26
Other Costs:		
Family Labor	16,000	3.56
Depreciation	17,145	3.81
Interest on Investment other than Land	44,993	10.00
Interest on Land Investment	180,662	40.15
Total	258,800	57.51
Return Above Cash Costs:	75,167	16.70
Return Above Cash Costs & Family Labor	59,167	13.15
Return to Total Investment	42,022	9.34
Return to Land Investment	-2,971	-.66

Production Assumptions: Herd size 4,500 head; 125% docking rate; 20% lamb loss docking to market; 17% replacement rate; 100% of lambs sold as feeders; 7% ewe loss; 9.5 lb. fleece weight; 35 ewes per ram.

Appendix C

Recreation Economic Analysis

Expenditures

Recreation expenditure figures have been derived from a variety of published reports. Confidence levels in the estimates are low. In other words, actual expenditures may vary widely from these estimates.

Activity	Recreation $Per Day	Expenditures Source
Hunting	35	Nevada Division of State Parks, 1980
Fishing	20	U.S. Fish and Wildlife Service, 1975
Camping	12	See Hunting
Off Road Vehicles	14	University of Wisconsin, 1975
Picnicing	9	Douglas, 1974
White Water Rafting	40	Various White Water Brochures

It should be noted that not all of these figures apply directly to the Reno area. Some of them are fairly old, but have been updated to account for inflation based on GNP implicit price deflators. Most of the figures are based on surveys. Since various surveys were used and may have measured different types of expenditures, the figures may not be directly comparable to each other. However, it is felt that they are reasonable approximations given available data.

Income

Direct income was derived by applying formulas outlined in (BEA, 1977) to the preceeding expenditure figures. It includes both labor and proprietors income.

Regional income includes direct, indirect, and induced income. In an area like Reno where most of the public land recreation use is by local residents there is a major problem with this approach. It is the question of whether a change in public lands recreation would change local recreation expenditures. Recreationists may divert their expenditure to or from another type of recreation or non recreation. Such a change would have little, if any affect on regional income. Therefore an assumption that a change in public land recreation would cause import substitution is required for this type of analysis. An example would be that if big game numbers were increased in the Reno region, then local hunters would hunt and spend money here rather than in some other region.

Employment

Employment is based on the income analysis outlined in the previous section. It is based on the ratio between income and employment in the Reno region from the Regional Economics Information System (BEA, 1980). This equals about $13,000 per job.

Capitalized Value

It should be noted that the science of ecomonics has not reached a level at which non-market items can be adequately valued. There is much disagreement within the profession concerning the valuation of non-market goods. Many economists and other socal scientists feel that it is not possible to place a meaningful dollar value on human activities and emotions such as those associataed with the pleasure derived from a wilderness experience or hunting trip. Even among those economists who feel that such experiences can be valued in dollar terms, there is little general agreement on the correct methodology. A wide variety of methods have been used in this field each with it's own series of assumptions and each leading to significantly different values e.g., travel cost, willingness to pay, willingness to sell, total expenditure, value added, comparison with private entry fees, maximum revenue of a non-price discriminating monopolist, land value, alternative cost, etc.

A review of some of the recent literature in the field is indicative of the current state of the art:

Sinden and Worell (1979) found that survey methods based on willingness to pay for non-market goods varied considerably depending on the way the survey was formulated. Using the same group of subjects, the total willingness to pay for a non-market good varied from $1,950 to $28,500 depending on the manner in which the survey questions were asked - this amounts to a difference of 1,362 percent of the low figure. For one subject, willingness to pay ranges from $50 to $12,000 - a difference of 23,900 percent of the low figure.

Gluck (1975) as quoted in Sinden and Worell (1979) found that average willingness to sell seasonal fishing rights in New Zealand was $609 whereas average willingness to pay for the same rights was $68 - about one tenth of the willingness to sell value. This is particularly important because given any reasonable income elasticity of demand, economic theory would indicate that there should be no significant difference between willingness to pay and willingness to sell measures (Bishop and Hegerlien, 1979), (Dwyer et. al., 1977).

Edwards et. al., (1976) in a study of methodological issues in outdoor recreation economics concluded that the standard travel cost methods are too general and that "the hypotheses in the approach are purely statistical in nature. While such hypotheses are important, our concern as economists is, necessarily, with the behavior of people, and not the properties of numbers per se."

Bishop and Heberlien (1979) found substantial differences between willingness to pay, willingness to sell, travel cost methods, and actual cash offers in valuing seasonal goose hunting permits in Wisconsin. They also describe potential biases in two of the more popular methodologies. The travel cost method is subject to the following weaknesses:

1) Potential biases exist if there are substantial differences in recreationists tastes and preferences, access to substitutes, and income levels at varying distances from the recreation site.

2) No generally accepted method for establishing the value of time in travel has been developed. It is not inconceivable that travel to some recreation sites may actually add to benefits not travel costs, particularly on scenic routes.

3) These methods require that recreationists treat travel costs as equivalent to admission costs. Travel costs represent an aggregation of many smaller costs, many of which are not obvious to the recreationists and are not incurred at the time of recreation use. Therefore it is unrealistic to assume that all recreationists perceive travel costs as equivalent to admission fees.

4) It does not adequately reflect decreases in quality that accompany increases in the quantity of use at a particular site.

5) It does not include acceptable techniques for measuring multi-purpose trips or multisite trips.

Hypothetical valuation or questionnaire methods are also subject to a number of significant weaknesses:

1) Gamesmanship by survey respondents. Respondents who realize that they will not actually have to pay for something may inflate the value of a good in the hopes that a greater value will result in a larger supply.

2) The hypothetical nature of the valuation is likely to introduce bias or inconsistencies. Actual market transactions may be based on weeks of analysis coupled with a history of past experience in the market. Spending an hour filling out a survey is not an equivalent process.

3) Bishop and Heberlien reference prior studies in which the actual behavior of persons was significantly different from the way they said they would behave in a survey. They conclude their study with the remark: "we would suggest that recreation economics has a long way to go before it can claim accuracy comparable to analysis of market phenomena".

Despite all of these conceptual and methodological problems user day values have been presented in this document. These values are being used more and more widely, primarily because public agencies which deal with non-market products have felt the need to justify budgets and resource allocations on economic grounds in order to provide a stronger basis for competing for limited resources with agencies which produce market goods.

The measure chosen in this document is total willingness to pay. This includes actual expenditures plus consumer surplus. It was chosen because of data availability. Some particular problems with this approach include: 1) Theoretically, consumer surplus is the value derived from a good over and above the cost of obtaining it. It can be argued that since consumer surplus can also be obtained from market goods but is not included in their value, the use of consumer surplus to measure non-market goods over values them. 2) Another arguement is that if people do not spend their money on a particular type of recreation, they will spend it on the next best alternative and the surplus derived from that expenditure will be close to the surplus derived from it's alternative. Therefore, only willingnes to pay over and above the cost of aquisition should be used. These arguements indicate that total willingness to pay over values recreation user days when compared to value of market goods such livestock forage. This should be recognized when using these figures.

The values used for hunting and fishing are from "A Report on the Value of Wildlife" which was prepared for the Intermountain Region of the U.S. Forest Service. Nevada values were the highest of any state in the region. They were updated to 1979 by using GNP implicit price deflators.

The values used for picnicing, camping,and backpacking are from two sources; expenditures are from a Masters Thesis from UNR entitled "Economic Factors Affecting the Demand and Financial Management of Selected Outdoor Recreation Areas in Nevada" by Jim Douglas, surplus measures are from a report prepared for the Bureau of Outdoor Recreation entitled "Evaluation of Public Willingness to Pay User Charges for Use of Outdoor Recreation Areas and Facilities" by Economics Research Associates. These were also updated with price deflators.

White water boating was valued at the market rate of $40 per day.

These values were capitalized in order to show thw amount of investment per user day that could be justified on economic grounds. The figures used are the present value of an annual user day value for 30 years discounted at 12 percent.

Income and Value for Deer Forage

Formulas used to calculate deer forage income and value are based only on data from Nevada since deer population estimates are unavailable for California areas.

Direct Income Formula

$$\frac{E \times (HD/D) \times GTM \times I}{AUM}$$

Regional Income Formula

$$\frac{E \times (HD/D) \times GTM \times TM \times RI}{AUM}$$

Annual Value Formula

$$\frac{HDV \times (HD/D)}{AUM}$$

Capitalized Value Formula

$$\frac{HDV \times (HD/D)}{AUM}$$

@12% for 30 years

Where: E=Expenditures per hunter day (Nevada State Parks, 1980)
HD=Deer hunter days, areas 2, 19, 29 (NDOW, 1980)
D=Deer populations, areas 2, 19, 29 (NDOW, 1980)
GTM=Gross trade margin (BEA, 1977)
I=Income per dollar of GTM (BEA, 1977)
TM=Trade multi-plier for Reno region (BEA, 1977)
RI=Regional income per dollar of output (BEA, 1977)
HDV=Value per deer hunter day
AUM=Animal Unit Months of forage per deer per year (3)
12%=Discount rate
30 Years=Discount period

Off Road Vehicle and Motorcycle Expeditures

Very little data is available on per day expenditures for ORV's. A great deal of additional research needs to be done in this field before an adequate analysis can be done. The analysis in this document is for comparison purposes only and should be used with great caution. It is not recomnmended that other analysts use the figures here without careful review of the source document. For this analysis only trip expenditures were used. No attempt to analyze depreciation of vehicles was included. It was also assumed that ORV trips on public lands in the Reno region would be less than 100 miles and motorcycle trips less than 26 miles. It should be noted that the data for the source document was collected in the Upper Great Lakes region and may not apply to western Nevada. It should also be noted that the data used are only for local residents.

The calculations used to develop expenditures are:

ORV's

Expenditures per trip per family	$90.00
Percent of average expenditures on trips of under 100 miles.	x 49%
	$44.00
Persons per household	Divided by 3.8
	$ 11.6
Inflation adjustment (Implicit Price Deflator)	x 1.3
Expenditure per person per day	$15.00

Motorcycles

Expenditure per trip per family	$50.00
Percent of average expenditures on trips of less than 26 miles.	x 28%
	$14.00
Motocycles per household	Divided by 1.35
	$10.00
Inflation adjustment (Implicit Price Deflator)	1.3
Expenditure per person per day	$13.00

Source:"Off Road Recreation Vehicles in the Upper Great Lakes States", University of Wisconsin, 1975.

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